ENGINEERING NEWS-RECORD

Prestressing headache: Making 200,000 holes p. 34

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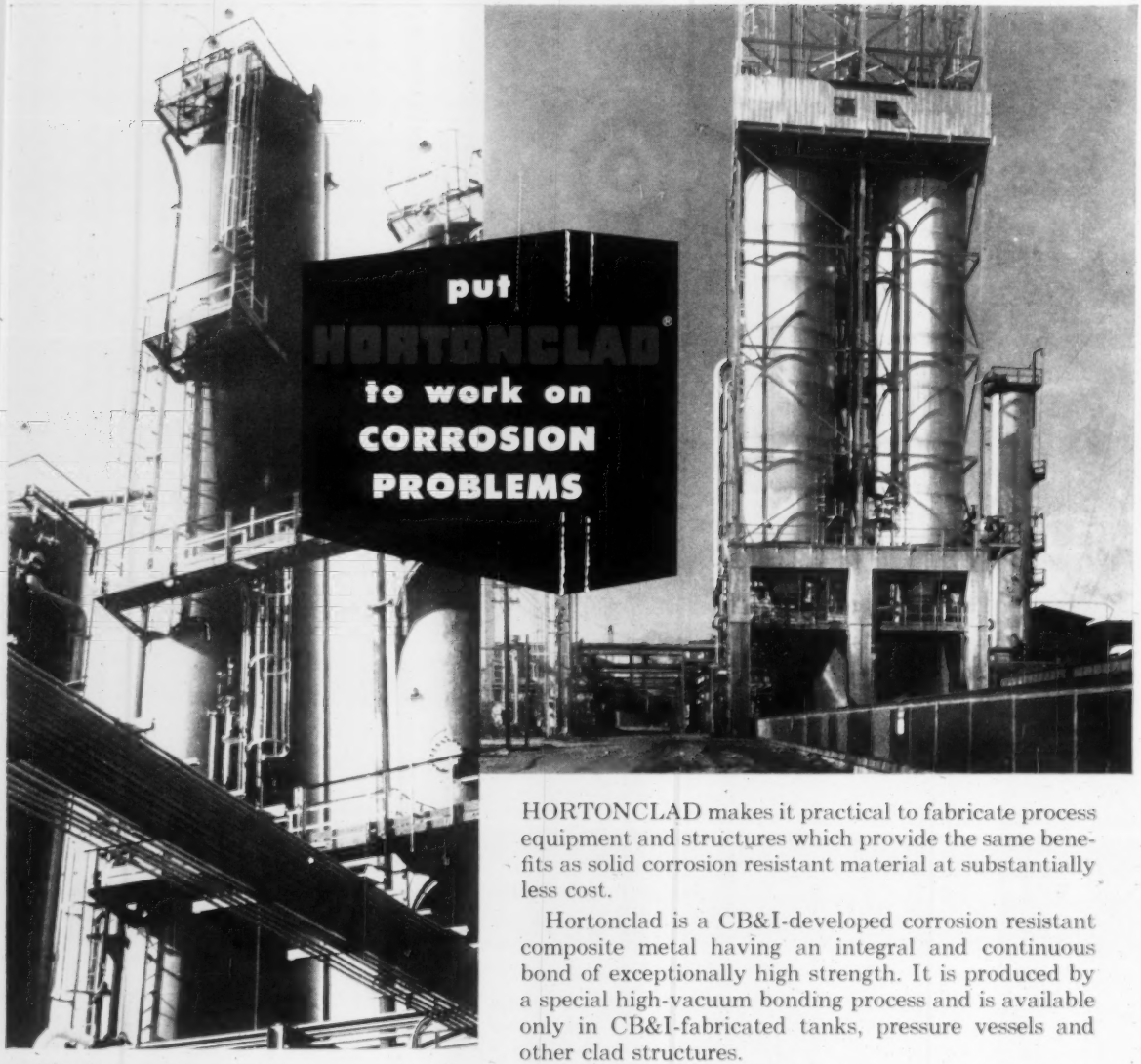

(Above)

ABSORBER TOWER at a Louisiana chemical company has stainless steel Hortonclad shell. Thickness of backing and cladding is 1¼ inches.

(Right above)

COKING CHAMBER at a Kansas refinery uses 405 stainless steel Hortonclad backed by A205 Grade A moly steel.

HORTONCLAD makes it practical to fabricate process equipment and structures which provide the same benefits as solid corrosion resistant material at substantially less cost.

Hortonclad is a CB&I-developed corrosion resistant composite metal having an integral and continuous bond of exceptionally high strength. It is produced by a special high-vacuum bonding process and is available only in CB&I-fabricated tanks, pressure vessels and other clad structures.

Silver, stainless steels (both chromium and nickel) nickel and alloys such as Monel, Inconel, Hastelloys B and F and a variety of other alloys may be employed in the Hortonclad process. Write our nearest office for a copy of the CB&I bulletin which describes:

. . . the benefits of HORTONCLAD

1. Corrosion resistance
2. Economy of design
3. Uniform thickness of clad and backing plate
4. Integral and high strength bond
5. Wide selection of cladding materials
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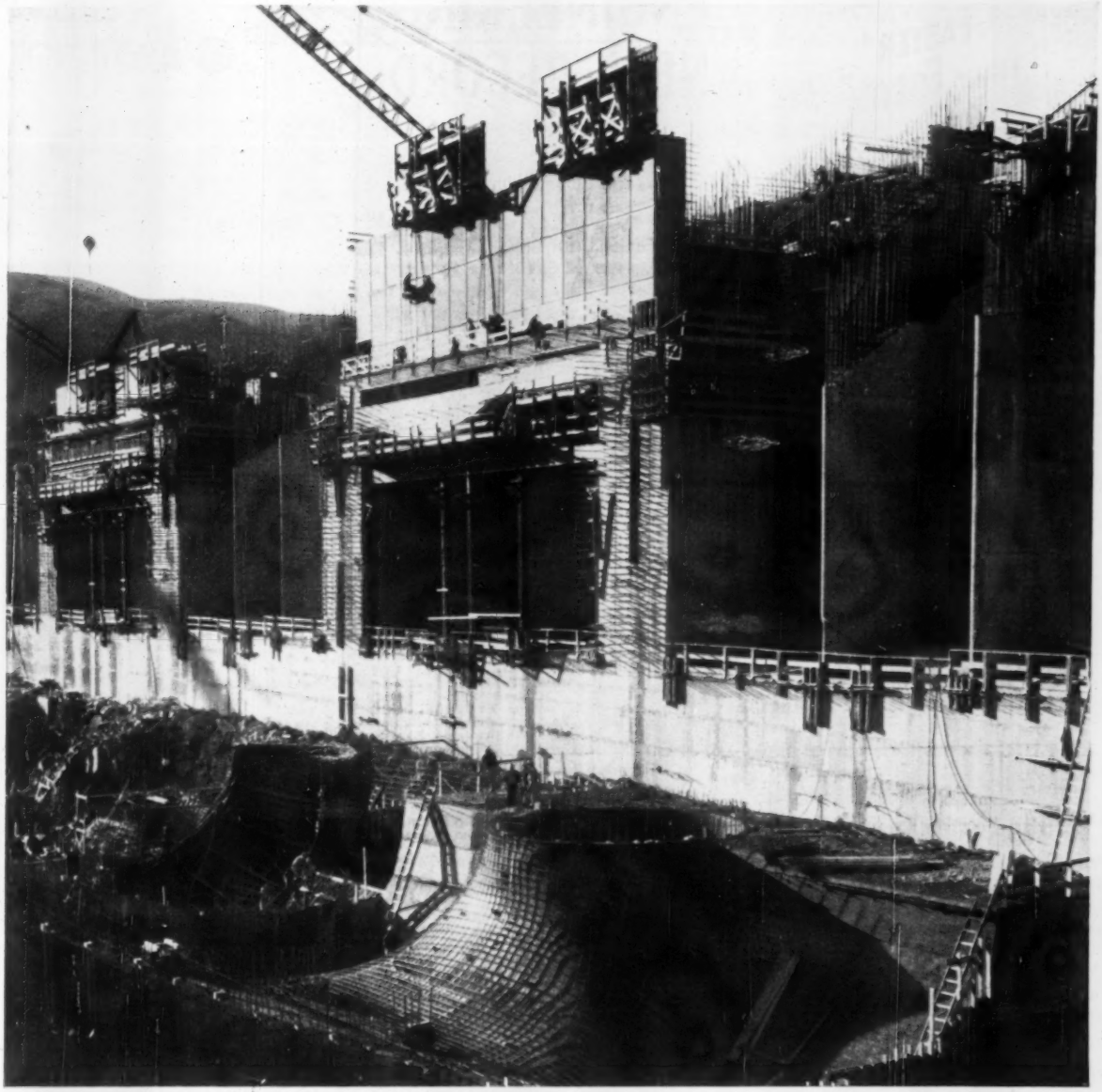

PROGRESS AT PRIEST RAPIDS

Concreting at Priest Rapids Dam on the Columbia River is moving ahead rapidly. Shown here is a construction view of the 1,025-ft powerhouse, with the water-intake structures at top and draft tubes at the bottom.

Bethlehem is supplying all of the reinforcing steel—some 22,500 tons—for the Priest Rapids Dam, being built for the Public Utility District of Grant County. Merritt-Chapman & Scott Corporation is general contractor.

Bethlehem is well equipped to furnish bars for any size job in any part of the country. Bethlehem bars are made of new-billet steel to ASTM Specifications A-15 and A-305 in all sizes. Facilities for shearing, bending and bundling bars are located throughout the country at ten Bethlehem bar fabricating shops. Bethlehem Steel Company, Bethlehem, Pa. On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. *Export Distributor:* Bethlehem Steel Export Corporation

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get the exact job lengths and exact job sections on the Foster Rental Plan

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TOUGH PIPE FOR TOUGH WORK . . .

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VITRIFIED CLAY PIPE

Deep trenches, shifting soils and high water tables are a few of the *tough* conditions prevailing on this sewer expansion project at Greenville, Pa. They are also reasons why *tough* Universal Vitrified Clay Pipe with pre-assembled, compression-sealing Tylox Flexible Couplings (pointed out in the photograph by Gilbert Morrill, Resident Engineer) were specified for the project. As James Brown, Greenville's City Engineer, put it. "the pipe couples quickly and we get water-tight joints, in spite of tough trench conditions."

When planning *your* sewerage projects, take advantage of UNIVERSAL's unbeatable pipe and joint combination for fast installation, water-tight joints and corrosion-resistance throughout—plan on Universal Vitrified Pipe with pre-assembled *flexible* Gaskets.

PROJECT: Sewer expansion, Greenville Sanitary Authority.

ENGINEERS: Chester Engineers, Consultants, Pittsburgh, Pa., Gilbert Morrill, Resident Engineer, and James Brown, Greenville City Engineer.

CONTRACTOR: Kundel Excavating, Inc., Warren, Ohio.

PIPE: UNIVERSAL Vitrified Clay with pre-assembled Tylox Gaskets.

NINE UNIVERSAL-U. S. PLANTS AND YARDS ASSURE PROMPT SHIPMENTS TO KEEP YOUR JOBS "ON SCHEDULE."

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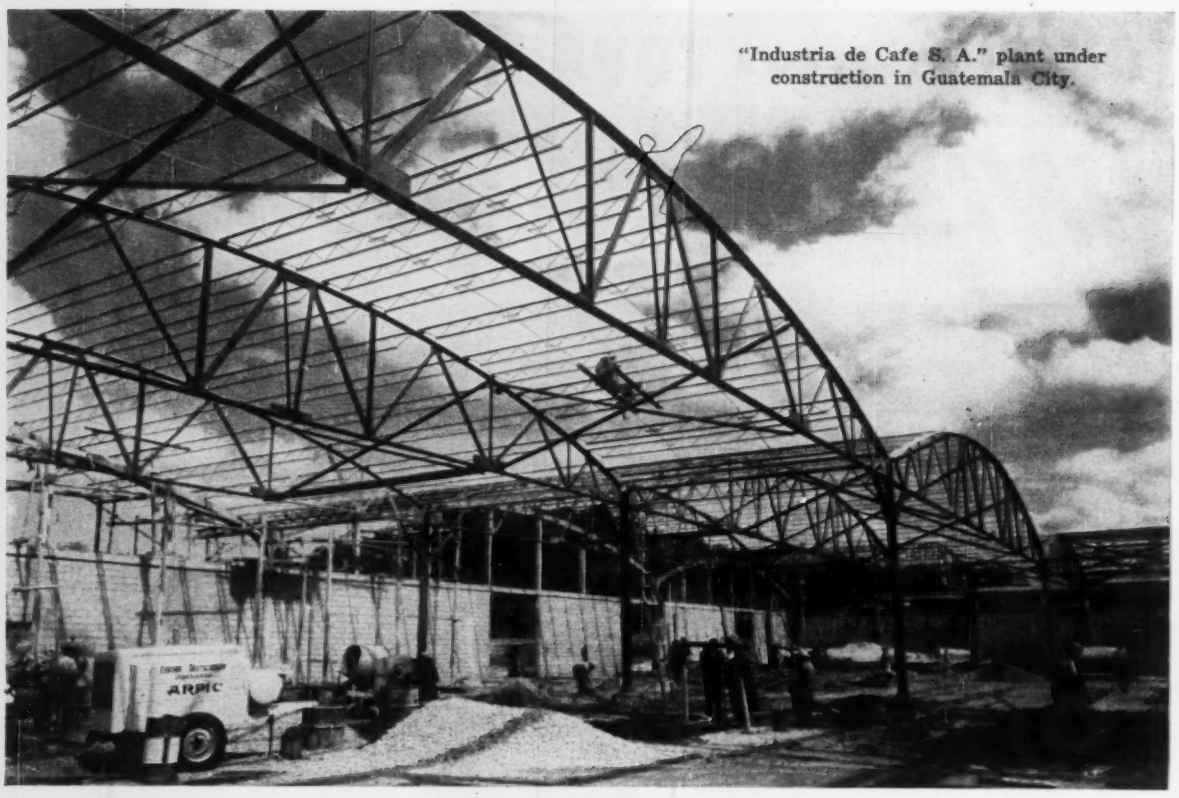
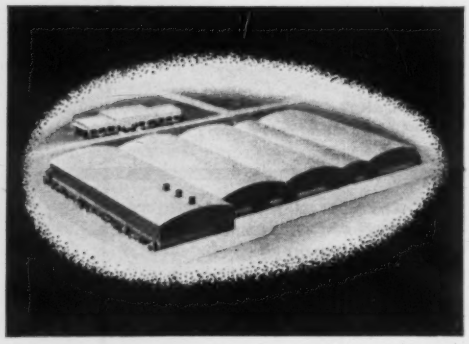


"Industria de Cafe S. A." plant under construction in Guatemala City.

Clear spans up to 110 feet, designed for hurricane wind loads with...



Completed Reynolds Aluminum Company of Cuba plant located near Havana.

MACOMBER V-BOWSTRING TRUSSES

The new all-aluminum, 73,600 square foot plant of Reynolds Aluminum Company of Cuba, near Havana is an example of the use of Macomber steel framing featuring V-Bowstring Trusses designed to meet hurricane wind-load requirements. Another recent Latin-American structure incorporating V-Bowstring Trusses is the Industrial de Cafe, S. A., 52,000 square foot plant in Guatemala City.

The inherent strength of the Macomber V-Bowstring Trusses, incorporating the greater structural values of cold-rollformed chords and webs, permits clear spans up to 110 feet for large unobstructed bay areas. The use of standard Macomber steel framing units simplifies design to speed erection and cut costs.

This new Macomber V-Bowstring design Manual is just off the press. Write for your copy.

MACOMBER

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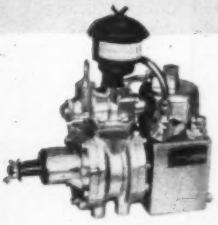
Rigid quality control
in manufacturing the
Wagner
ROTARY
AIR COMPRESSOR
and other air brake components improves operating efficiency and service life

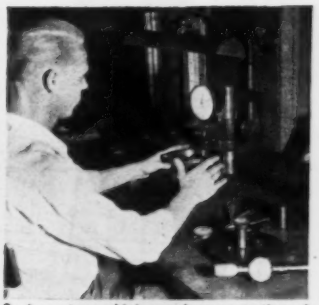


The superior operating features of Wagner Rotary Air Compressors are directly related to Wagner's Rigid Quality Control manufacturing program. Rigid quality control throughout every stage of manufacturing is an important reason why owners have so little trouble when the compressors are put into operation. At the factory every unit must pass careful inspection and run-in tests to assure that each compressor provides an adequate supply of air pressure at all times, with fast air recovery; and can provide safe, dependable performance and long service life.

If service should be needed—the entire compressor can be completely disassembled, serviced and put back into operation in a few hours right in your own shop. Wagner factory service branches in 23 major cities and the vast network of Wagner Air Brake Distributors throughout the United States and Canada are near at hand to serve you promptly and efficiently on any air brake need.

Remember—when ordering new equipment, be sure to specify Wagner Air Brakes.

1. Accurate machining assures the smooth, cool operation of the Wagner Rotary Air Compressor. Close dimensions on all planes of the rotor eliminate vibration . . . permit compressor blades to function smoothly at high speeds.



2. Accurate machining and gauge testing of the stator, as well as the rotor, also contributes to the rotary compressor's ability to operate for long periods of time without delevoping leaks or losing efficiency.

3. Compressor shafts are given the "cold box" treatment. When exposed to very low temperatures, the shaft diameter contracts. This altered shaft diameter allows proper insertion into a heated rotor to form a strong, composite unit.

4. Compressor rotors are subjected to high oven temperatures to expand rotor diameters. Shafts and rotors joined together under these extreme conditions resume their original relative size to create an extra strong assembly.

5. Assembled rotary compressors are hooked up to air lines and operating air pressure is applied for leakage tests. While holding pressure, entire compressor is submerged to determine whether any air is escaping.

6. Every Wagner Rotary Air Compressor is given a rigorous "run-in" test to determine its resistance to overheating and its over-all performance. Running temperatures, vibration, noise and air output are carefully noted and analyzed.

WK56-1

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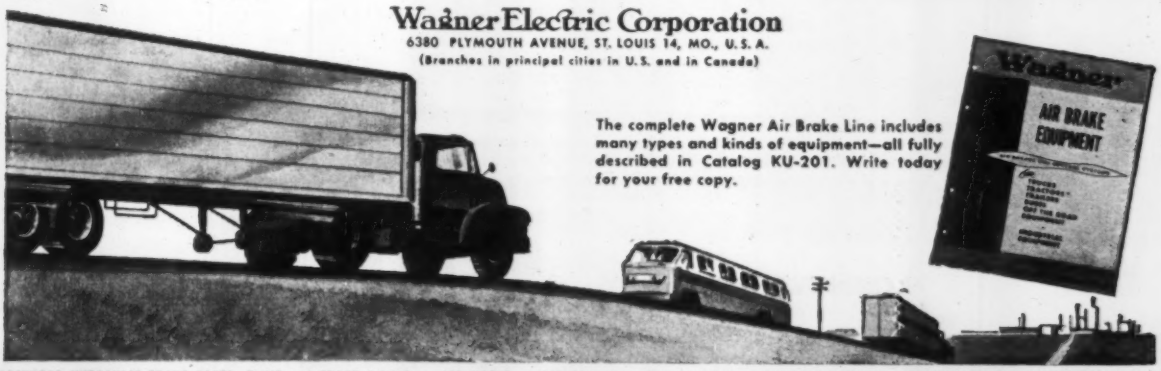

The complete Wagner Air Brake Line includes many types and kinds of equipment—all fully described in Catalog KU-201. Write today for your free copy.

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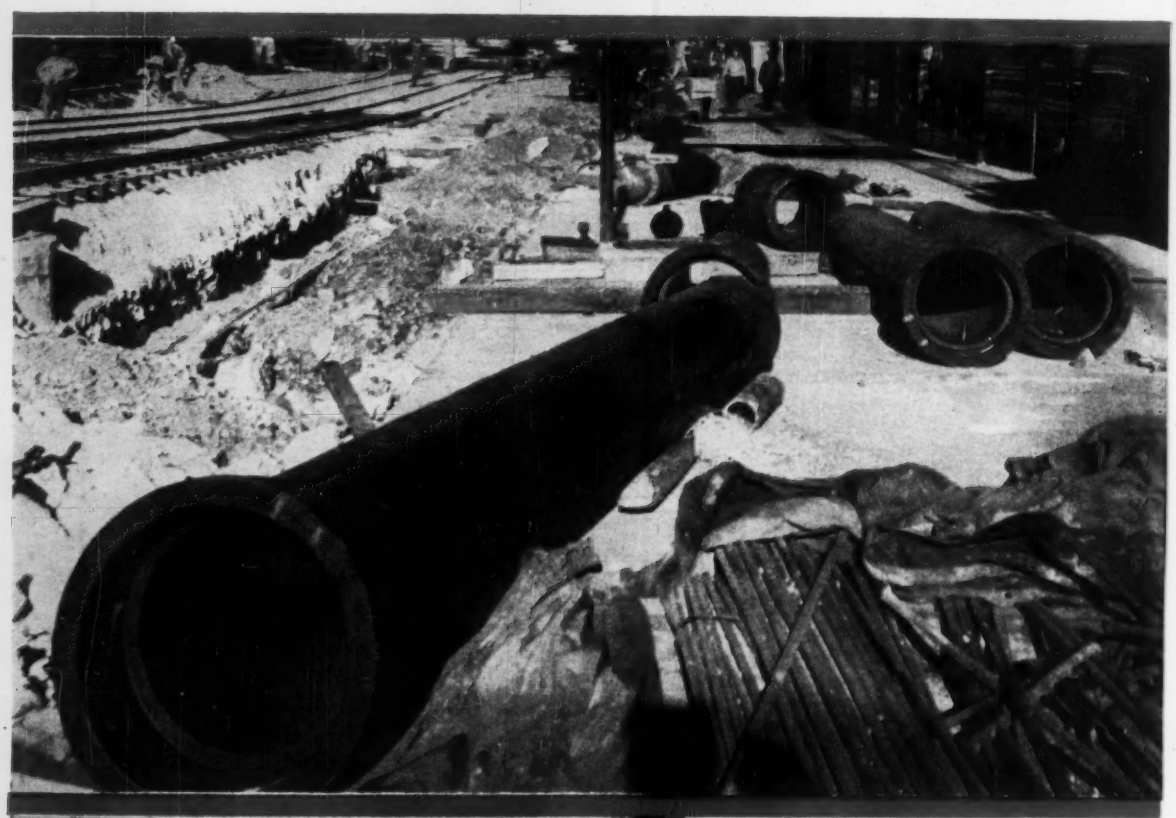
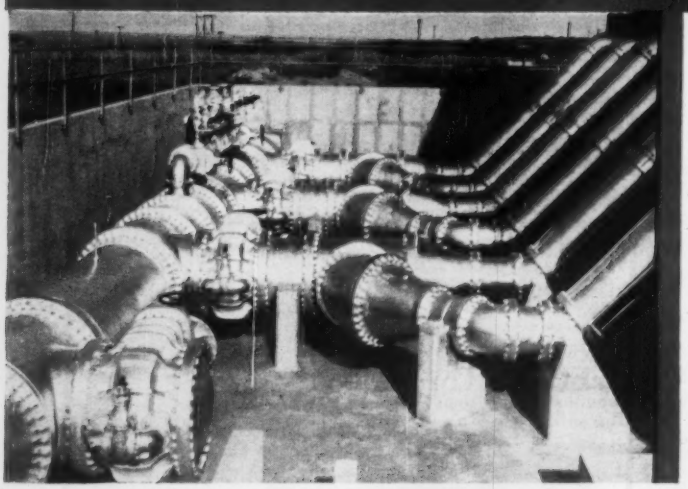


Chicago, Ill.—Cast Iron Pipe for installation of new water main under West Madison Street.



Corpus Christi, Texas—Cast Iron Pipe installation in filtration plant showing 48" discharge manifold which is connected to 48" Cast Iron city supply line.

THE MAN WHO CHOOSES CAST IRON PIPE TODAY WON'T PAY FOR IT AGAIN TOMORROW!

CAST IRON

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Thos. F. Wolfe, Managing Director
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MODERNIZED **cast iron**

HIGH FLOW

You get BOTH with CAST IRON PIPE

*Here's the proof of flow

FLOW FACTORS FOR CEMENT LINED CAST IRON PIPE

LOCATION	SIZE	TEST SECT. IN FEET	VELOCITY F.P.S.	AGE YEARS	W & H "C" FACTOR
Bowling Green, Ohio	20"	45,592	0.7-2.4	New	142.5
Chicago, Illinois	36"	7,200	2.6-3.6	New	147
New Orleans, La.	12"	39,650	1.2-2.9	New	141
Corder, Mo.	8"	21,350	0.9-2.3	New	143
Univ. of Illinois	8"	400	3.14	New	150
Concord, New Hamp.	14"	500	1.7-2.2	New	151
Concord, New Hamp.	12"	500	2.0-3.4	11	142
West Palm Beach, Fla.	12"	500	3.6-5.4	15	139.5
Greenville, S. C.	30"	87,376	2.4-2.7	12	148.5
Corpus Christi, Tex.	30"	65,641	1.1-1.8	6	146
Summerville, S. C.	8"	500	1.98-2.43	13	142.5
Champaign, Illinois	16"	3,920	3.1-5.6	22	139.3

*Available upon request: Booklet containing flow test and tables on Cast Iron Pipe.

Here's the proof of strength

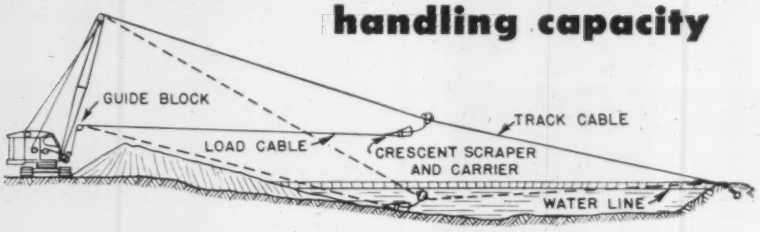
1. CRUSHING STRENGTH* . . . Standard 6" Class 150 cast iron pipe will withstand a crushing load, under standard tests, of 17,900 pounds per foot . . . important where heavy fill or shock from heavy traffic loads are encountered.
2. BEAM STRENGTH* . . . Settlement soil movement, or disturbance of the soil by underground construction places a heavy strain on pipe. A length of 6" class 150 cast iron pipe bears up under a load of 20,790 pounds and deflects over 2¼ inches.
3. BURSTING STRENGTH* . . . Tests prove that standard 6" class 150 cast iron pipe withstands internal pressure of 3000 pounds per square inch . . . providing a safety factor ample to resist high working pressures and water hammer.
4. JOINT STRENGTH . . . A full range of leak-proof, low cost, easy-to-assemble joints for pipe and fittings are available to meet all conditions.
5. CORROSION RESISTANCE . . . Cast Iron Pipe resists corrosion . . . vital factor in its proven long life and dependability.

*Based on independent laboratory tests.

pipe FOR MODERN WATER WORKS

the SAUERMAN METHOD...extends the reach of your crane

the CRESCENT SCRAPER...increases its handling capacity



Drawing shows crane using Crescent Scraper and carrier with a track cable. This arrangement increases effective digging range and permits gravity return to the excavation for a faster operating cycle. Maximum operating span is governed only by amount of cable that may be reeved on the drag drum.

Use This Fast, Economical Method For:

Cleaning Ponds
Trenching Streams
Sludge Removal
Cleaning Under Bridges
Building Reservoirs
Beach Construction

Any crane can handle a Crescent Scraper larger than its regular dragline bucket. Smaller units can increase their capacity about 50%. Large cranes can usually double their capacity. When the boom is supported by a strut or outrigger, a Crescent of still greater size can be used. Arrangements of this type have increased rated crane capacity as much as 4 to 1.

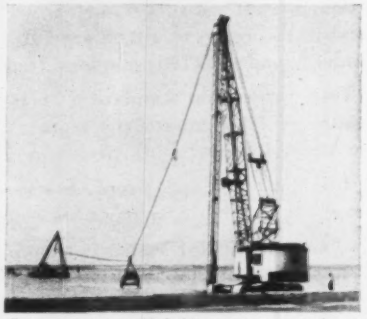
The Crescent hauls its load on the ground and the load is automatically deposited when the bucket is raised. Only the empty scraper bucket is lifted by the crane.

When a crane is equipped with a track cable, Crescent and carrier, it can reach farther, dig deeper under water or from soft areas without the nuisance of mats. Anchorage for the track cable may be fixed—or movable to provide easy shifting to a new line of operation. A tractor makes an excellent mobile anchorage.

Although the track cable method is best for increasing your machine's range, the Crescent can also be cast like your regular bucket.

Get the facts on how much the capacity of your crane can be increased. Give us the make, model and boom length. Ask for Field Report 228 and Catalog J. Catalog T tells how to use Crescents with tractors.

This Indiana contractor used the track cable method with a 1¼-cu. yd. Crescent Scraper to trench across a river. After the water main was placed, the scraper backfilled the trench.



Boom support enabled this crane to use a larger Crescent. After a sub-grade of coral was placed, the 4-yd. scraper was reversed and used to grade the beach. Barge-mounted winch served as anchorage for track cable and supplied power to scraper on grading operations.

Important to Users of Blocks and Fittings: Get the new Sauerman bulletins showing the complete line of Wire Rope Fittings and Durolite Sheaves available from stock. Ask for Bulletins 164 and 165.

SAUERMAN BROS., INC. 632 SO. 28th AVE. BELLWOOD, ILL.

Crescent Scrapers • Slackline and Tautline Cableways • Durolite Blocks

Reader Comment

For Tax Reform

Sir—Your editorial "Make Depreciation Realistic." (ENR June 5, p. 132) is most timely.

This problem was recognized and debated at length during the Associated General Contractors' convention last February in Dallas. As partial relief can come only from tax reform, AGC then and there resolved to do all within its power to find and evolve into law a tenable solution.

Investigation has revealed that several practical proposals have been developed and that some of them have been brought to the attention of Congress by their authors. However, as you have stated, none has been introduced in the form of a bill. In general, currently proposed legislation seems to go no further than a brief postponement of taxes in the hope that business will take the bait and "buy it now." Thus, for the moment, we must defer to that fiscal expediency which just now pressures Congress with more than usual intensity.

We must await the appearance of a legislator with the ability and courage to recognize in our present tax methods the means whereby America's productive machinery is being gradually, but certainly, confiscated. With it will disappear our best weapon to fight inflation, i.e. our productivity. Yet, the U. S. is the only industrial country of consequence in the world which has not recognized in its tax laws that its monetary unit varies in value.

Robert M. Hoover
Chairman
Reinvestment Depreciation Committee
AGC of America, Inc.
Kansas City, 5, Mo.

Bouquet from AGC

Sir—I wish to express the appreciation of this Association, and to offer my own personal thanks for the excellent article on the Associated General Contractors of America, Inc. which appeared in the June 12 issue of the Engineering News-Record. Your Washington staff has always cooperated with us, and it is indeed

Engineering News-Record welcomes expression of opinions from its readers. Comment should be as brief as possible and pertinent to subjects of current construction importance. Letters should be addressed Editor, Engineering News-Record, 330 W. 42nd St., New York 36, N. Y.

A Must on the Big Ones...

Bearing Plates of the Greater New Orleans Mississippi River Bridge (top photo), like those of the considerably smaller Pennsylvania Turnpike Bridge, are of safe, economical Lukens clad steel.

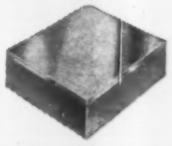
...Insurance on the Small!

LUKENS STAINLESS-CLAD STEEL BEARING PLATES GIVE SAFETY, ECONOMY, LOW MAINTENANCE!

Trouble-free movement of bridges on their supports is assured with bearing plates of stainless steel. Lukens Stainless-Clad Steel Bearing Plates provide all of the essential corrosion protection of solid stainless—at markedly lower first cost.

That's why Lukens Bearing Plates are specified for more and more bridges, large and small. To meet varying bridge design demands, particularly as to strength, two types of Lukens Clad Steel Bearing Plates are available. The standard type provides a minimum yield of 30,000 psi. A higher strength plate—incorporating A-302, Grade B backing steel for larger bridges—will meet a 50,000 psi minimum yield requirement. All bearing plates can be supplied flattened and machined on both sides to within .010 inch of dead flat.

For details, write—Manager, Marketing Service, 158 Lukens Building, Lukens Steel Company, Coatesville, Pa. Ask for special bulletin 180.



LUKENS clad steel is a solid plate—one surface corrosion-resistant metal permanently bonded over all to an economical backing steel.

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An Economical New Fastening System For Asbestos Sheets

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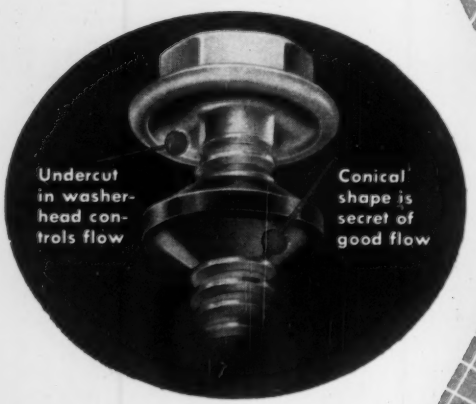
If you are fastening corrugated asbestos or sandwich board, you can effect important economies with Townsend Tuff Tites. Write for full information. Townsend Company, P. O. Box 237-L, New Brighton, Pennsylvania.



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a pleasure to work with such fine gentlemen.

May I add that because of ENR's excellent coverage of the entire construction industry, we on the AGC staff read it regularly and look forward to receiving each weekly issue.

William E. Dunn
Assistant Executive Director
AGC of America, Inc.
Washington, D. C.

It's Not All Science

Sir—It was a pleasure to read the editorial (ENR May 29, p. 96), referring to the importance of the art of engineering. It is hoped that more colleges will recognize the importance of instruction in the application of engineering in their civil engineering curriculum.

I agree that the successful engineer will not be a slave to standards and conventions but, as pointed out in your editorial, convention and standardization on many occasions may become an indispensable crutch. Therefore, this engineering art must be presented to our potential civil engineers at the undergraduate level.

Joseph S. Ward
Consulting Engineer
Caldwell, N. J.

Lighting Developers

Sir—The last paragraph of your article about the Houston bank building's high-frequency lighting (ENR June 19, p. 120) incorrectly stated that the system was designed by R. D. Burnham when associated with the firm of R. D. Burnham & Associates. The lighting system was designed by Golemon and Rolfe, architects, Houston, Tex. developed, engineered and manufactured by us when Mr. Burnham was on our staff.

T. D. Wakefield
Executive Vice President
The Wakefield Co.
Vermilion, Ohio

Illinois not Iowa

Editor's Note: The article in the April 17 issue describing the Meckum Sand and Gravel Jig carried an incorrect address for Meckum Engineering, Inc. It is Ottawa, Illinois, not Iowa as stated.

CALENDAR

Expanded Clay and Shale Association, mid-year meeting, Cosmopolitan Hotel, Denver, Colo., July 20-21.

Hydraulics Division, American Society of Civil Engineers, 7th national conference, Georgia Institute of Technology, Atlanta, Ga., August 20-22.

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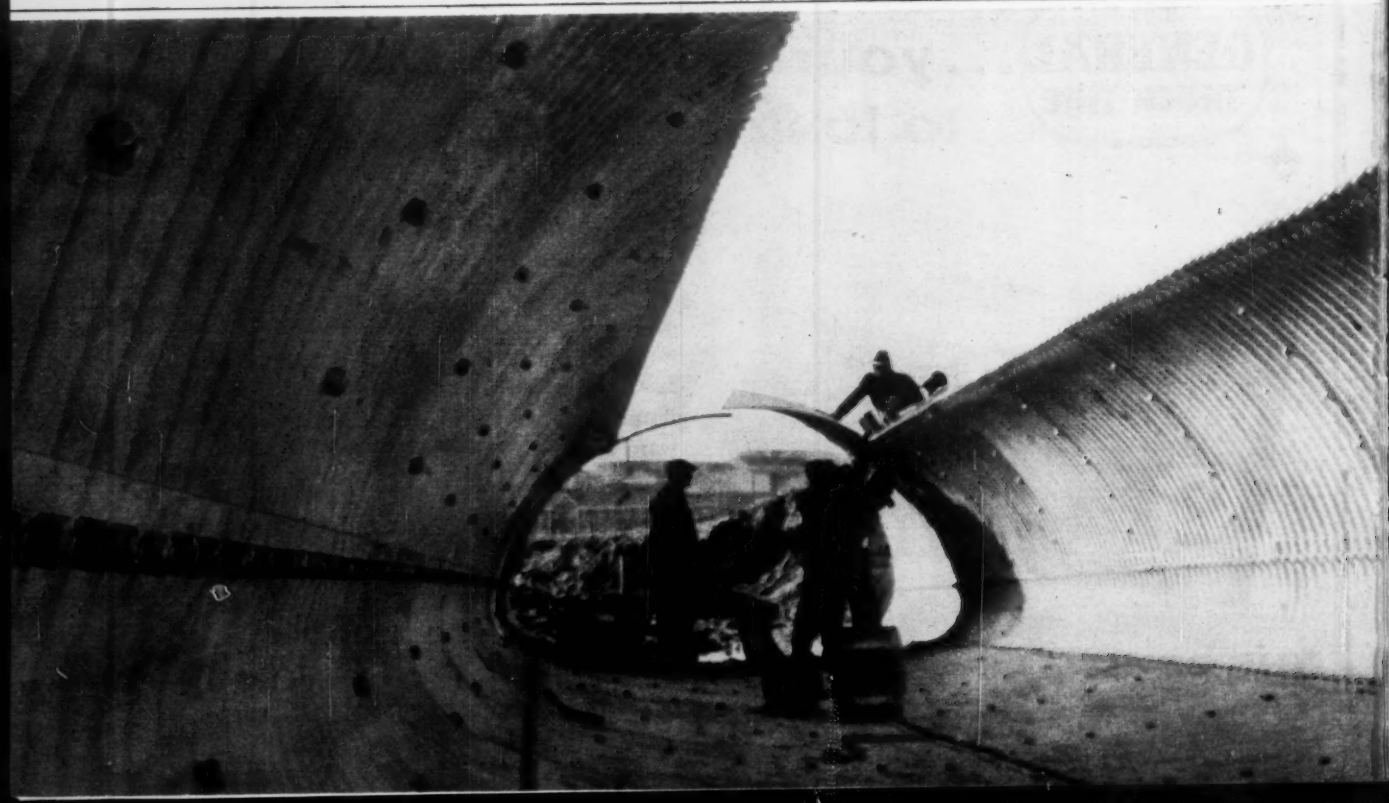
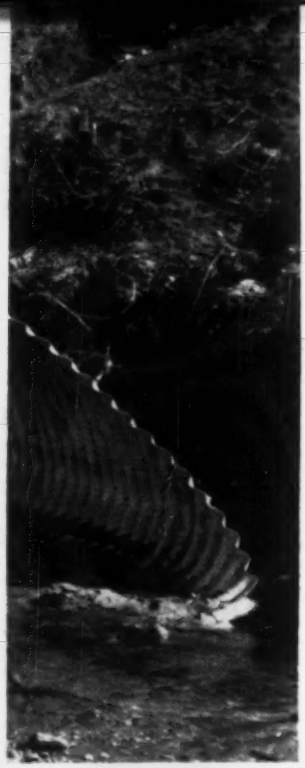




These Structures were furnished to Prince Georges County, Maryland—John H. Marburger, Jr., Administrator of Public Works—by Lane-Penncarva, Inc., Bealeton, Virginia.

Twin Beds for Winkledoodle

. . . or a quick, low-cost way to remove a roadblock

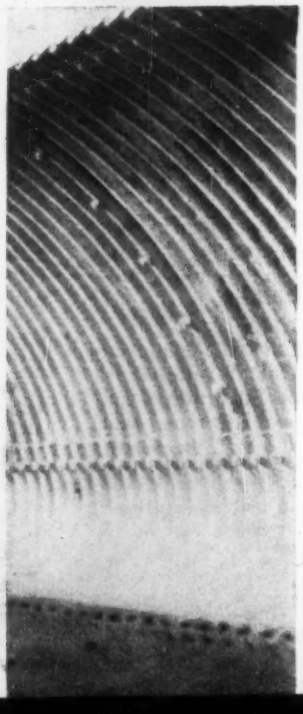
Winkledoodle is a quiet little creek which runs through a real estate development in the Maryland suburbs of Washington.

But sometimes even an innocent-looking stream like Winkledoodle becomes a headache when it blocks progress by dead-ending a street which ought not to be dead-ended. Solving such a problem is less difficult than you might think, as you can see from the experience of the Department of Public Works of Prince Georges County, Maryland.

Serving as giant twin-covered beds for Winkledoodle, long pipe-arch drainage structures shown here were made of USS AmBridge Sectional Plate. They each have a 12′6″ span, a 7′11″ rise, and are 112′ long. Each was erected in the bed of the temporarily diverted stream in just *five working days* by a five-man crew, plus crane.

Job Superintendent says: "They went together easier than any in my experience."

The dimensional accuracy of prefabricated USS AmBridge Sectional Plate Pipe, Pipe-Arches and Arches assures precision fit in the field. In fact, Arthur Richards, Bridge Superintendent, enthusiastically says that the Winkledoodle drainage structures went together easier than any in his experience. He was also impressed with the uniform curvature of the interchangeable plates.



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USS AmBridge Sectional Plate Pipe, Pipe-Arches and Arches eliminate the need for forms. And, being made of steel, there is no breakage. They are permanent. And they can be extended whenever the road is widened. Fabricated to meet all federal and state specifications, they are available in a complete range of standard sizes to satisfy the design requirements for area of waterway openings.

For a free copy of our 28-page AmBridge Sectional Plate Catalog, write direct to our Pittsburgh Office. For information on smaller drainage structures made from USS Galvanized Corrugated Culvert Sheets, please send your inquiry to United States Steel, Room 2801, 525 William Penn Place, Pittsburgh 30, Pa.

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New **Longer-Wearing** Pattern in Wire Rope Styles!

After three years of extensive field trials this, the newest of Roebling's wire ropes, is now ready to go to work for you on a service basis that will exceed that of *the wire rope you are now using*.

Roebling Herringbone* combines the best features of both regular and Lang lay rope constructions; being made up of two *pairs* of Lang lay strands and two strands of regular lay. The regular lay strands separate the two pairs of Lang lay strands. Thus, in one rope you have the superior flexibility and abrasion resistance of Lang lay and the greater structural stability of regular lay.

For the past three years, under all kinds of conditions, Herringbone has been used for general hoisting, holding and closing lines, shovel ropes, wagon scraper ropes and dragline ropes. The results have been wonderful . . . excellent flexibility, exceptional resistance to shock and abrasion, smooth, easy operation around drums and over sheaves, smooth spooling properties and structural stability unequalled by other rope for the same job.

There has never been a better time—or a wider need—for a wire rope that returns so much service for its cost. And, in addition to being a top performer on the job, Herringbone eliminates the necessity of stocking Lang lay for one purpose and regular lay for another.

You are invited to get in touch with your Roebling distributor or write Wire Rope Division, John A. Roebling's Sons Corporation, Trenton 2, New Jersey, for further and fuller details on the *investment* qualities of this new and highly serviceable rope.

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   - C. Permit economical redesign of conventional concrete mixes.

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TAPPING comes naturally

Tapping that involves no "bugs" may mean frustration to the woodpecker, but it spells economy and efficiency to the water works operator. This type of tapping comes naturally with Lock Joint Concrete Pressure Pipe.

Modern tapping equipment and technique have made the tapping of Lock Joint Concrete Pressure Pipe a simple, speedy operation. Small outlets for service connections, or larger ones for take-offs or cross connections, may be made under pressure with no danger of cross-threading or splitting the pipe.

Thousands of such pressure taps made in the field on Lock Joint Concrete Pressure Pipe attest to the reliability of an operation which, in no case, ever caused damage to the pipe being tapped.

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ENGINEERING NEWS-RECORD

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THE CONSTRUCTION WEEK

CONTRACTS GOING UP—Heavy construction contracts this week hit the highest weekly volume since 1952. Awards total $733 million for private, federal, state and local construction, ENR figures show. Private mass housing alone accounts for a whopping $242 million. A new structural rolling mill for U. S. Steel lifts industrial building awards to the highest weekly total in 18 months. This week's spurt pushes the '58 total 7% above '57 to $11.4 billion. Federal contracts also continue to boom: Another $130 million this week puts the '58 total 21% above '57.

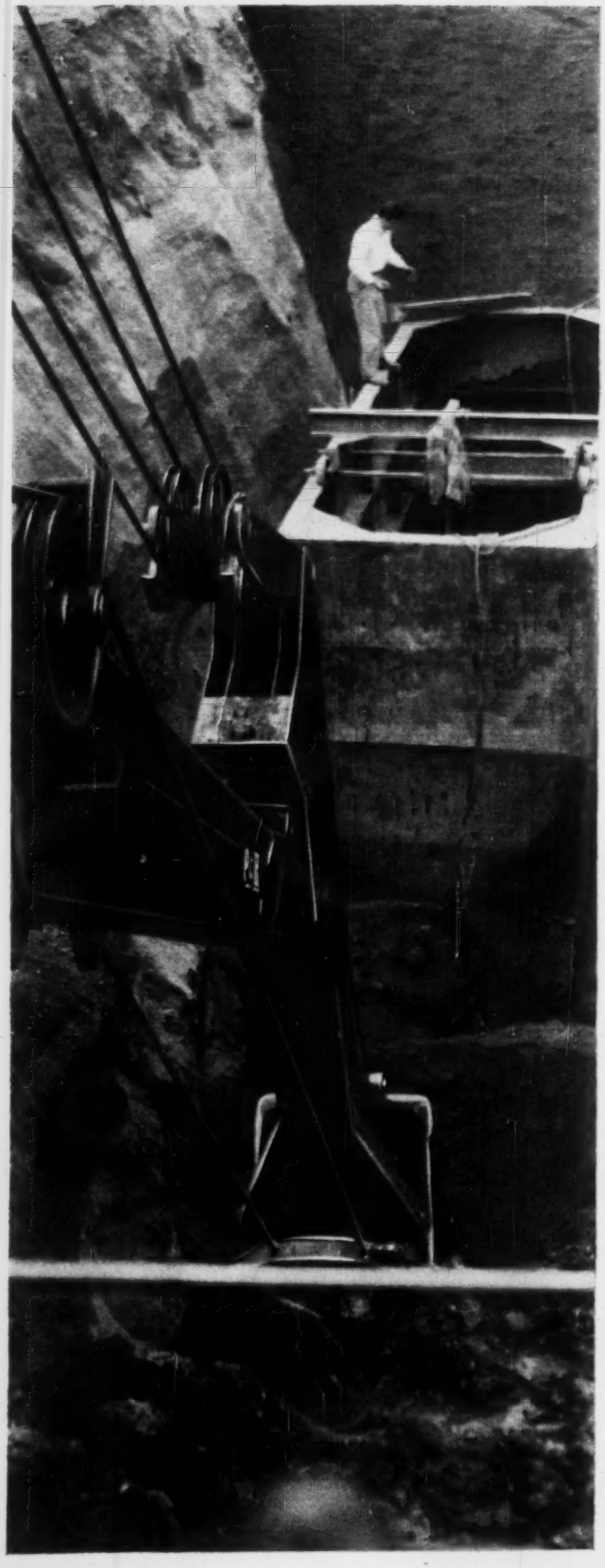
HOUSING STILL CLIMBING—Housing starts rose sharply in June to 115,000 units. Most of the gain was in private housing, which totaled 104,500 units. The seasonally adjusted annual rate of 1,090,000 units was the highest since August 1956, according to the figures released by the Bureau of Labor Statistics.

NUCLEAR DESALTING PLANT?—The State of California will join the federal government in financing a study of the feasibility of constructing a nuclear reactor saline water conversion plant. A $100,000 contract for the study has been signed by the Interior Department with Fluor Corp., of Whittier, Calif. It will be based on production of 10 to 20 million gal of salt-free water per day. Five more plants may be in the offing. They would be built by Interior's Office of Saline Water.

WHAT NEXT?—Construction work on an interstate highway just north of Des Moines, Iowa, has been stopped by 13 outhouses and 14 gardens. It'll take federal action to break the bottleneck. Under Iowa laws, the State Highway Commission cannot take possession of condemned land occupied by homesteads, outhouses or gardens until the purchase price has been determined in court. Commission records show at least two of the outhouses were recently moved into the highway's path.

WATERWORKS CONSTRUCTION GETS BOOST—The American Water Works Association thinks its campaign to raise the industry's construction level to $750 million a year (it was $560 million in 1957) is paying off. The association's survey of 180 communities serving 15% of the U.S. population indicates a 20% hike in 1958 scheduled waterworks construction.

NO TAX BREAK LIKELY—Construction workers on jobs away from home aren't likely to get any federal income tax break on their traveling expenses for some time. In testimony before Congress, the Internal Revenue Service said it will take no further action until the Supreme Court decides the Peurifoy case. So the old and troublesome doctrine still stands—no deduction if the work away from home is of "indefinite" rather than "temporary" duration.



Power to trench 30 feet deep with 2½ cu. yd. bites

On the toughest digging and lifting jobs you'll find P&H Diesel at work making good construction equipment perform better. An engine with lots of reserve strength and high torque, the P&H Diesel maintains a high rate of production—handles peak loads without stalling.

Until Harnischfeger developed the P&H Diesel, contractors had to be satisfied with diesels which did not fully utilize all the potential of their equipment. But now, P&H Diesels have changed this situation with:

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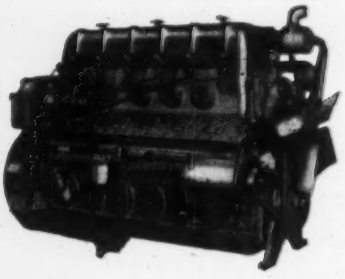


P&H DIESELS

Fastest Growing Name in Diesel Power

WASHINGTON OBSERVER

- **Billboard rules ready to announce**
- **VA will back Jersey's antibias laws**
- **TVA bond financing compromise urged**
- **TVA Board members near confirmation**

- **States will soon be told what they must do in order to get a cash bonus for controlling billboards along the interstate net of highways.** The Department of Commerce is ready to announce a proposed set of rules. Then the states, the billboard industry, and highway-user groups will have a chance to argue about them.

  Final regulations won't be settled before September. Congress voted to control signs along the new roads by offering states a bonus of one-half of one percent of the federal share of the cost of each project if a state agrees to control billboards.

  The legislation okays four basic types of signs: Official traffic signs, those advertising sale or lease of property, those of general interest to the public—and commercial signs of activities within 12 miles of the billboard.

  The last category is the controversial one. There is varied opinion over what it means. For example, can the mere sales of a product qualify it for a sign? The next question is: How many signs each commercial establishment rates?

  Control of signs applies only to the new sections of roads. Existing highways meshed into the interstate system will not be stripped of billboards.

- **New Jersey will have federal aid in its legal campaign to enforce nondiscrimination laws covering private housing.**

  The Veterans Administration says it will not do business with a builder who refuses to conform to the state's laws. That would mean no GI mortgage approvals. The Federal Housing Administration has a similar—but apparently less ironclad—agreement with New Jersey. Officials there have complained about Builder William Levitt's plan to sell to whites only in Levittown, N. J. (ENR July 3, p. 82). Levitt is using FHA financing, not VA.

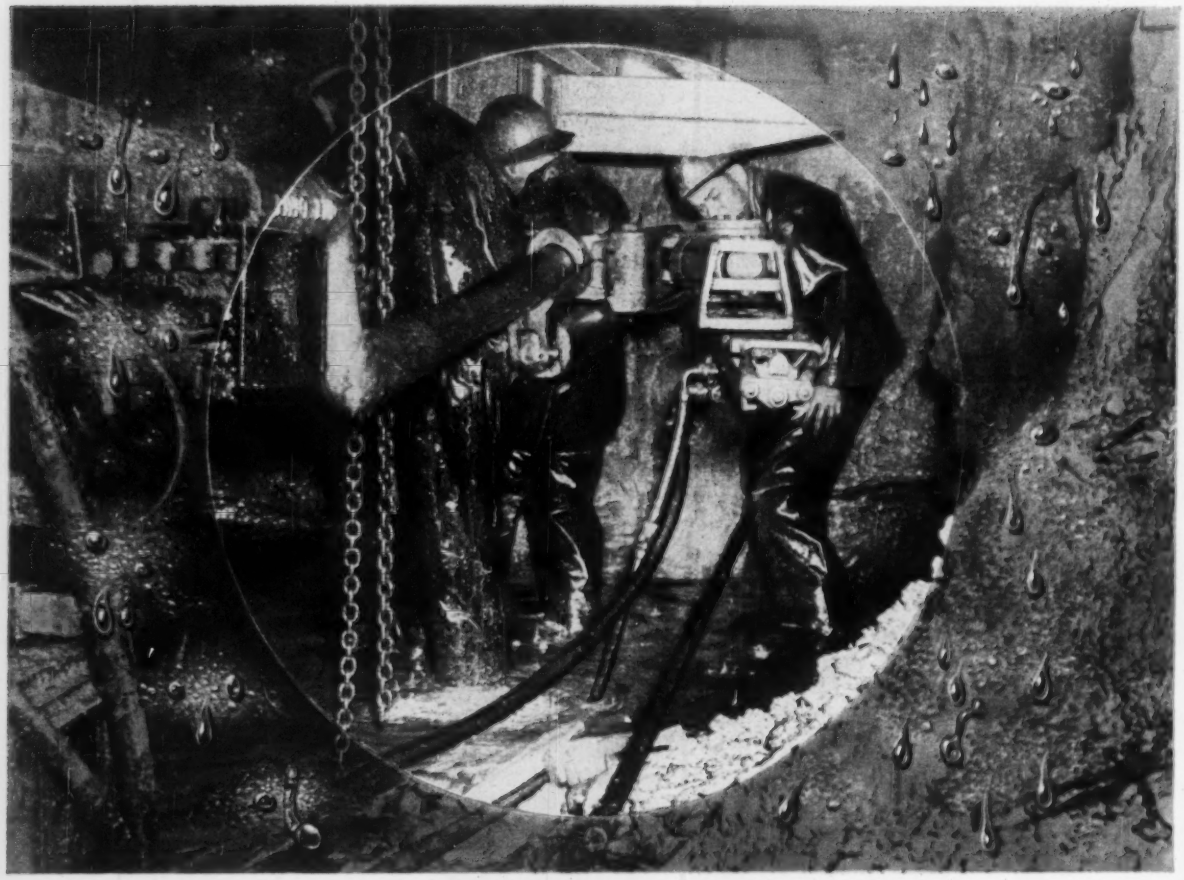
  The impact of the federal intervention is narrow. VA and FHA will apply this kind of pressure only in cooperation with states that have antidiscrimination laws—if the states ask for such agreements. Thus far, only New York and New Jersey have done so.

- **Congressional leaders are trying to get action on the TVA bond financing legislation.** That's the proposal to permit the Tennessee Valley Authority Board to issue revenue bonds for improvement of the system. A Senate-passed bill would put limits on the authority—prohibit an expansion beyond present borders and limit outstanding bonds to $750 million. A House Public Works Committee bill is much more loosely drawn.

  Speaker Rayburn is getting behind a move to bring the House bill in line with the Senate measure, so the House of Representatives can consider it this session. Right now, the conservative House Rules Committee, which schedules legislation, is sitting on the House-approved measure.

- **Confirmation of two TVA Board members probably will come this year—but late in the session.** The Senate Public Works Committee on Monday approved the appointments of A. R. Jones and Frank J. Welch, who have been serving temporarily. But final okay by the Senate will be deferred. Democrats hope a compromise can be reached on the TVA bond bill, without killing it.

US RUBBER AIR HOSE



It's the Air that keeps things moving!

Deep under the Catskill mountains in Southern New York, thousands of feet of air hose snake along the wet, jagged rock passages of the West Delaware Tunnel project.

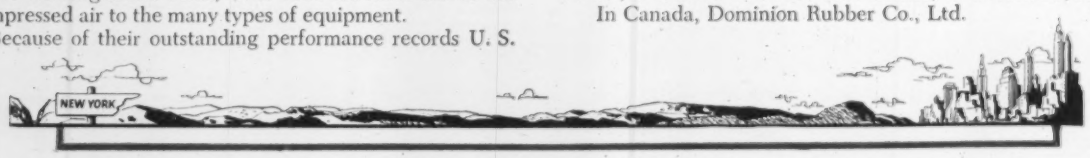
On this mammoth 160-million-dollar, 4-year construction job, everything below ground is run by compressed air (except, of course, the lighting). From muckers to exhaust fans, from suction pumps to jumbo drills, it's compressed air that *keeps things moving*. And every cubic foot of compressed air moves through U. S. Rubber Hose.

First, high-capacity U. S. Bull Line Hose carries the air to the working faces. Then, U. S. 4810 Air Hose moves the compressed air to the many types of equipment.

Because of their outstanding performance records U. S. Bull Line and U. S. 4810 Air Hose were selected by the several contractors involved. Both hose have covers of tough, pure-gum rubber to resist the severe abrasive conditions encountered. Both hose also feature neoprene tubes to combat action of oil in air lines. And between cover and tube, both Bull Line and 4810 have kink-resisting carcasses, each engineered for greatest hydrostatic values.

For all construction requirements, a complete line of rubber products—plus expert engineering assistance—is available at the 28 U. S. District Sales Offices, at selected distributors, or write us at Rockefeller Center, New York 20, N. Y.

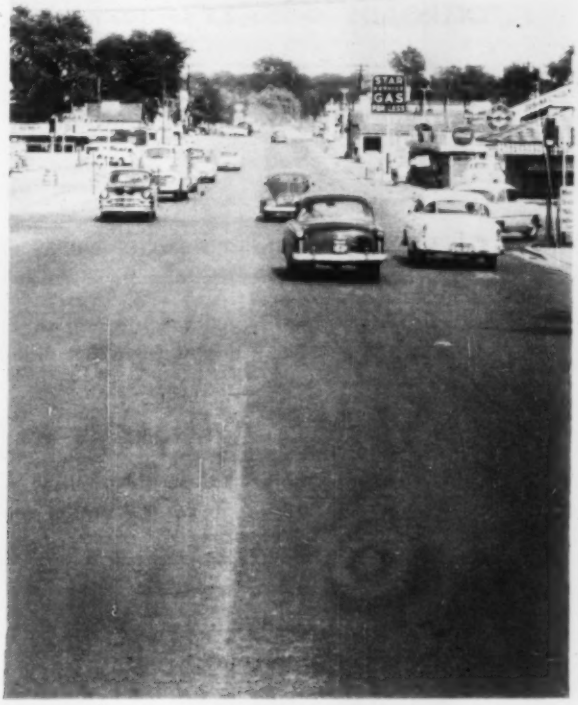
In Canada, Dominion Rubber Co., Ltd.



U. S. RUBBER PRODUCTS AT WORK ON THE 44-MILE WEST DELAWARE TUNNEL

US RUBBER Mechanical Goods Division **United States Rubber**

Controlled access means lower death rate . . .



When compared with free access roads. But . . .

How Much Safer Is Limited Access?

Two recent holiday weekends, the time for carnage on the roads, dramatically point up what highway people repeatedly expound—and sometimes have to pound into the minds of local communities:

Death and accident rates on limited-access roads run just a fraction of the rates for all other roads.

What fraction?

As little as one-third and at least one-half.

Proof is in the record of the nation's tollroads—which are as controlled-access as you can get. It is also in the results of a U.S. Bureau of Public Roads study.

First, there was the Memorial Day weekend traffic record. While 371 deaths were counted across the nation, there were no fatalities reported for the country's major toll facilities.

Then, the recent July 4 weekend set another good, if not perfect, record for the limited-access road. For that weekend, there were only four fatalities reported on 2,434 miles of 13 major pay-as-you-drive highways. There were 370 deaths on all other roads.

• **Three times safer**—Tollroads had a fatality rate of 2.2 per 100 million vehicle-miles for the July 4 weekend. Comparison with the 1957 national average of 6.4 racked up for all roads shows the safety-engineered roads are almost three times safer.

These better traffic records do not, and will not, belong to tollroads alone. BPR officials voice the opinion—backed by facts—that controlled-access highways are 2½ times safer than those that have no access control. And more and more free limited-access roads are being built each year.

The bureau has made a five-year study of some 2,100 miles of highways in 27 states. The results prove that the more access control there is, the more lives are saved.

Fully controlled-access roads proved out at 3.1 deaths per 100 million vehicle-miles. No access-control roads hit a rate of 7.4. Even partially controlled-access roads—which sometimes can be the worst because of the false sense of security they give the driver—came out better, with an over-all rate of 6.1.

The reasons why fully limited-access roads are safer are pretty well-known. For one, they are newer. This means wider traffic lanes and bridges, wider and better shoulders, separated opposing traffic streams, acceleration and deceleration lanes.

But, the one big reason, of course, is the complete absence of intersections at grade. Interchanges and overpasses remove that deadly cause of accidents.

• **And getting better**—The safety aspect alone would justify the Interstate Highway System, which will be fully access-controlled. Some safety men predict 4,000 lives a year will be saved.

The U.S. tollroads are not only safer than the non-controlled-access roads—but they are becoming safer still over the years (see p. 22).

Fatality rate for the major tollroads went from 3.8 in 1955 to 3.0 the next year and down to 2.6 for 1957. The non-fatal accident rate also keeps dropping: 153.5 per 100 million vehicle-miles for 1955, 144.0 for 1956 and 113.3 for 1957.

(Continued on page 22)

How the Accident Rates Compare

1957

TOLLROADS Deaths—3.8 per 100 million vehicle-miles
226 deaths for 6 billion vehicle-miles

ALL ROADS & STREETS Deaths—6.6 per 100 million vehicle-miles
38,426 deaths for 583 billion vehicle-miles

1956

TOLLROADS Deaths—3.0 per 100 million vehicle-miles
241 deaths for 7.9 billion vehicle-miles

ALL ROADS & STREETS Deaths—6.3 for 100 million vehicle-miles
39,628 deaths for 628.4 billion vehicle-miles

1955

TOLLROADS Deaths—2.6 per 100 million vehicle-miles
232 deaths for 8.9 billion vehicle-miles

ALL ROADS & STREETS Deaths—5.9 per 100 million vehicle-miles
38,500 deaths for 650 billion vehicle-miles

Source: American Bridge, Tunnel & Turnpike Association.

• **The reasons why**—The American Bridge, Tunnel & Turnpike Association gives reasons for this decrease. Foremost is that the tollroads can afford to, and do, keep an ever-increasing, intelligent, forceful and extensive law enforcement and guidance policy in effect 24 hours a day. For example, during rush hours planes and helicopters are widely used in addition to highway patrol cars

Also, the very nature of entering a tollroad makes it possible to weed out some of the potential accident-makers, such as drunken drivers and defective cars, at the barriers. The toll booths also give the authorities an opportunity to caution and guide drivers on conditions they will encounter. One other factor, although not considered very big, is that people over the years are becoming more experienced in using the new roads.

And, of course, pedestrian deaths are practically nonexistent on the tollroads and other limited-access highways. On rural roads, where 75% of traffic deaths occur, pedestrians make up 11% of these fatalities.

Pedestrians account for 50% of the traffic deaths that occur in urban areas.

The Interstate Highway System, and other free controlled-access roads, will definitely have lower death and accident rates than the average roads. But they probably will be slightly higher than for tollroads. For one thing, the barrier check will not be present. And more important, law enforcement on free roads isn't likely to approach that on tollroads. There are just too many miles of roads for most hard-pressed law enforcement agencies to cope with in the tollroad manner.

A Boom Going

Federal contracts climb to near record high

Federal construction is booming and apparently reflects the determination of the government to do its share in turning the economy upward as soon as possible. Federal contract awards during the first 28 weeks of this year are 16% ahead of the volume a year ago, ENR figures show. Moreover, last week's $197.3 million in awards, which brought the 28 week total to $1.8 billion, was the largest weekly figure recorded in six years—overshadowed by only a few weeks since ENR started recording federal contracts in 1913.

"Capehart" military housing brings the biggest lift to federal construction. In the first two weeks of July, Capehart awards totaled $142 million, far in excess of the largest full-month volume recorded to date. It's the first time they topped $100 million. The Capehart award total through July 10 was over $504 million, nearly double the figure for all of 1957.

Other leaders in federal work are military airbases and missile bases. In the first six months of 1958, airbase contracts totaled $433 million, beating last year by 6%. Included are missile base contracts totaling more than $27 million. This is a small part of the whole, but it shows rapid growth.

Federal contracts for buildings other than Capehart housing and airbase buildings also are up sharply this year. Total in the first half was $278.5 million, twice the $138.3 million let in the January-June period of 1957.

But awards for other federal works are off—mostly dams and river and harbor projects—from $673 million last year to $383 million this year.

Wanapum Moves

Final plans on Columbia River dam requested, new trench method to be used

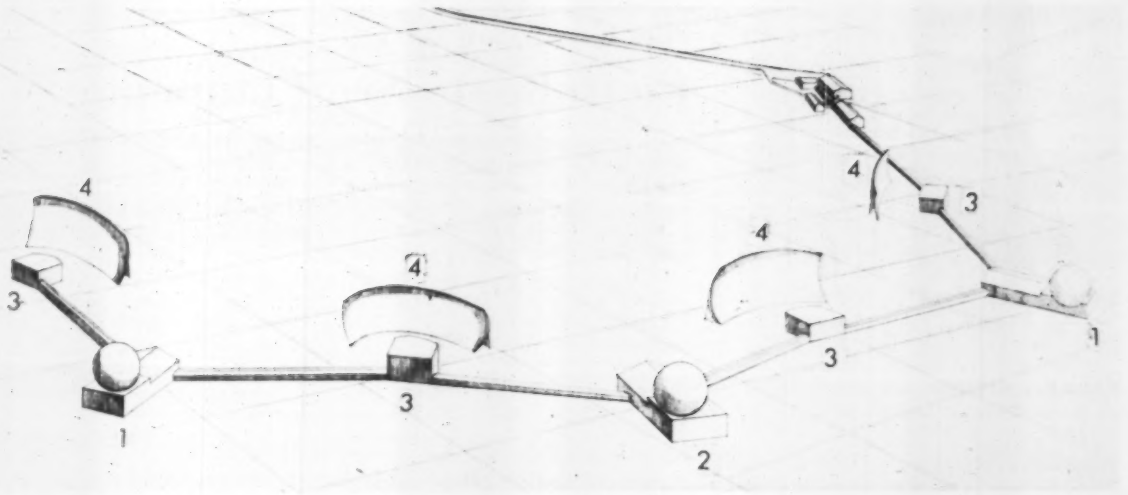
Harza Engineering Co. Chicago has been instructed by the Grant County Public Utility District to prepare detailed plans for 612,000 kw Wanapum Dam on the Columbia River, just above Priest Rapids. Construction bids are expected to be called in December.

Bids on the $200 million project will be called on a single contract, as on the PUD's Priest Rapids project. The one contract would include equipment as well as all construction.

Wanapum's construction will utilize a slurry method of effecting an impervious cutoff to rock, according to G. A. Smothers, PUD manager. The method is expected to cut costs by several million dollars, by reducing the amount of excavation required to reach bedrock.

Ordinarily in digging a trench in gravel or loose rock, such as that found at the Wanapum site, a great deal of material has to be removed because the walls keep caving in. The new method consists of mixing bentonite with water to form a thin slurry that has very little more specific gravity than water. When placed in a trench, the heavier slurry displaces the ground water and also forms a thin coat on the sides of the excavation that holds the loose material in place. By keeping the trench full of slurry during the excavating process, it is thought possible to dig a vertical-walled trench 6 ft wide and 60 ft deep in gravel with a dragline.

In preparing an impervious cutoff, the excavation is made to bedrock, after which impervious material is placed in the trench to displace the slurry. Tests made of this method at the Wanapum Dam site have been very successful.



New Arctic radar bases will cost $300 million (see key)

Going Up: New Line to Aid DEW Line

Construction of two new Ballistic Missile Early Warning System (BMEWS) bases—one in Alaska, the other in Greenland—is now getting under way. And between now and their scheduled completion in 1960, the projects will put more than $300 million into the construction kitty.

The total estimated cost of the two installations is set at $800 million, but less than half that will go into physical plant. The rest will be spent for the development, manufacture and installation of electronic and mechanical equipment.

Already the Army Corps of Engineers, Eastern Ocean District, has awarded $55 million in contracts for work in Thule, Greenland.

The Alaska District of the Corps is preparing to let some $30 million in contracts for work on the base to be built near Fairbanks, but it may be six months before any awards are made.

• **Speed a must**—The new facilities are needed to close a gap in our warning system left by the DEW (Distant Early Warning) Line. The DEW Line can cope with manned aircraft and the so-called "air breathing missiles," like the turbo-jet propelled "Snark" or "Matador." However, it cannot detect faster high-trajectory, rocket propelled missiles, like "Thor," "Atlas" and "Jupiter," which are now being perfected.

In the face of a short construction season in Thule (June through October) and an even shorter shipping season (mid-July to mid-September) a speedy start was imperative. For this reason, according to Col. Aldo H. Bagnulo, Eastern Ocean District Engineer, contracts have been awarded to a construction combine that handled construction of existing military bases at Thule and is currently building Nike sites around the Thule Air Base.

The combine is made up of Danish Arctic Contractors, Copenhagen, in joint venture with the Greenland Contractors, Trenton, N. J. The latter group consists of Peter Kiewit Sons' Co., Omaha; S. J. Groves & Sons Co., Minneapolis; Condon-Cunningham, Inc., Omaha; and Al Johnson Construction Co., Minneapolis.

Much of the initial contract funds will be used for advance purchases of materials needed at the base next spring before the harbor ice breaks up enough to permit shipping. The remainder of the money will go for such work as can be done between now and the start of winter weather in October. This includes construction of about 15 miles of access roads and foundation work (excavation and placing of non-frost-susceptible pads) for those facilities on which design is far enough advanced. It also covers additions to construction camps necessary to accommodate the more than 1,600 men who will construct the facility.

• **Radars are big**—Technical facilities at each site will consist of four large detection or surveillance radars that will pick up the firing of any missile, and three tracking radars that will trace the trajectory of a missile. Each of the detection radars will have a reflector 165 ft high and 400 ft long. The tracking radars, each of which will be mounted atop the 30 ft high roof of a 150 ft x 370 ft transmitter building, will have radomes 168 ft in diameter.

These seven facilities will be laid out in a 6,000 ft long semicircle and will be connected by a passageway large enough to carry vehicular traffic. The passageway will have an inside vertical clearance of 14 ft 8 in. and a horizontal clearance of 20 ft. It will provide weather protection for the personnel manning the station, and it will also carry utility lines from building to building.

Key to BMEWS layout

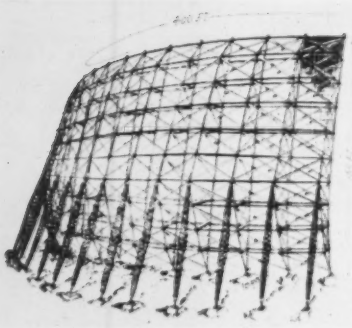
1. Radar transmitter bldg.
2. Radar transmitter-computer bldg.
3. Surveillance radar scanner bldg.
4. Surveillance radar antenna.

The non-technical area at the site, consisting of a maintenance shop, cafeteria, emergency dormitory, garages and a fire station, also will be connected to the passageway.

Power requirements for operation of the radars—almost 35,000 kw—will be supplied by a Navy YFP-10 floating power plant. The ship carries three 11,500 kw steam turbine generators. It is currently being renovated at Fort Lauderdale, Fla. Later it will be brought to Greenland and permanently moored at the shoreline near the base. For protection against the elements, a wall of undisclosed nature will be built completely around the vessel.

• **Builders face difficulties**—Defense Department officials believe that the construction problems posed by BMEWS will be far more difficult than those encountered in the DEW Line operation. The DEW Line consists of 58 radar outposts that went into operation across the top of the world last summer after

. . . New bases



RADAR ANTENNA is about as big as an up-ended football field.

32 months of building. The cost was $600 million, and of this more than $400 million went for construction.

The big problem on BMEWS involves setting up detection radars so huge that, as an official puts it, their erection is like standing up a football field on its side.

• **Quantities are impressive**—Some idea of the over-all construction picture for BMEWS is found in statistics from engineers' estimates. The Thule project will involve 675,000 cu yd of borrow, 165,000 cu yd of excavation, the placement of 40,000 cu yd of concrete, 800 tons of reinforcing steel and 5,000 tons of structural steel. More than 1.2 million sq ft of prefabricated panels will be placed in the structures to provide 700,000 sq ft of usable floor space. Heavy and bulky materials will come in by ship, but many smaller components will be airlifted in all winter.

The design of the Thule BMEWS is being handled by two firms of architect-engineers under contract with the Eastern Ocean District. These firms are Metcalf & Eddy, Boston, and Gruzen, Strobel & Panero, New York City.

Original plans for BMEWS called for the construction of three bases. The third base was variously rumored as slated for Canada, Norway or Prestwick, Scotland. For the present, at least, plans for the construction of the third base have been dropped.

Even without the third base, however, the U. S. will have complete polar radar coverage. The surveillance units on the two bases to be built will have 3,000 mile range for the detection of ballistic missiles, and will provide the continental U. S. with a 15 minute warning. Short though this time is, it is sufficient to insure that the Russians would suffer retaliatory measures should they decide to launch an attack against the U. S.

Knowledge of this is expected to be a deterrant to any aggressive Russian action from over the Pole.

Price is no factor, but . . .

Consultants Are Competing

It's not supposed to happen. But it does. ENR has found an overt example of competition among consulting engineers.

Big New York firms are competing. And it has become a grizzly, serious struggle. So deadly, in fact, that lately schedules have had to be set up to establish which firms should oppose which.

Many New York City engineering firms (and architects) are trying desperately to outdo their rivals in heated competition. The question of professionalism is raised immediately, of course. Officials of professional societies decline comment on the situation. But one officer admits the situation certainly bears watching.

ENR's investigation brought out these startling facts:

• Tippetts-Abbett-McCarthy-Stratton started it with a challenge to other engineers some six years ago. It was not a partner in the firm, but an employe named Jim Pickett who stirred up the competition and to this day spearheads it.

• Now, after six years of rugged rivalry, 14 firms are known to be involved.

The firms involved are: TAMS, Consentini Associates; Parsons, Brinckerhoff, Hall & Macdonald; Lummus; Voorhees, Walker, Smith & Smith; Raisler Corp.; Charles H. Sells, Inc.; Syska & Hennessy; De Leuw, Cather & Brill; E. Lionel Pavlo; Andrews & Clark; Di Stasio & Van Buren; Fred S. Dubin.

Bosses, not just employees, are involved. They don't all participate, but they watch—with approval. They swap their swivel chairs for a field, where tempers flare, men cajole each other, arguments mount and a most unprofessional type of conduct prevails.

But Jim Pickett won't admit there is any harm done. He claims it's actually good for the profession to have competition.

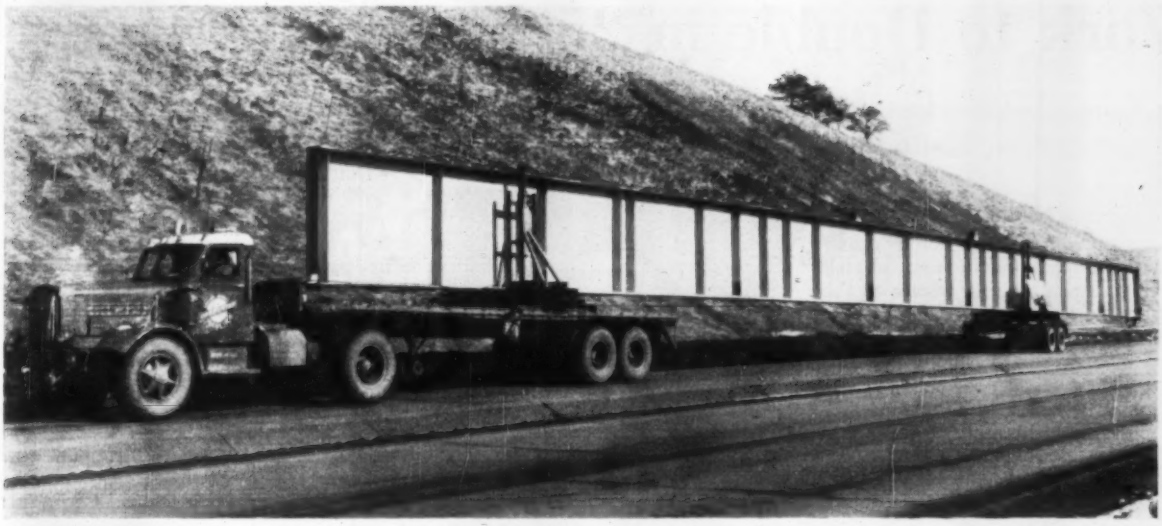
His reason?

Softball is fun for office-weary engineers.

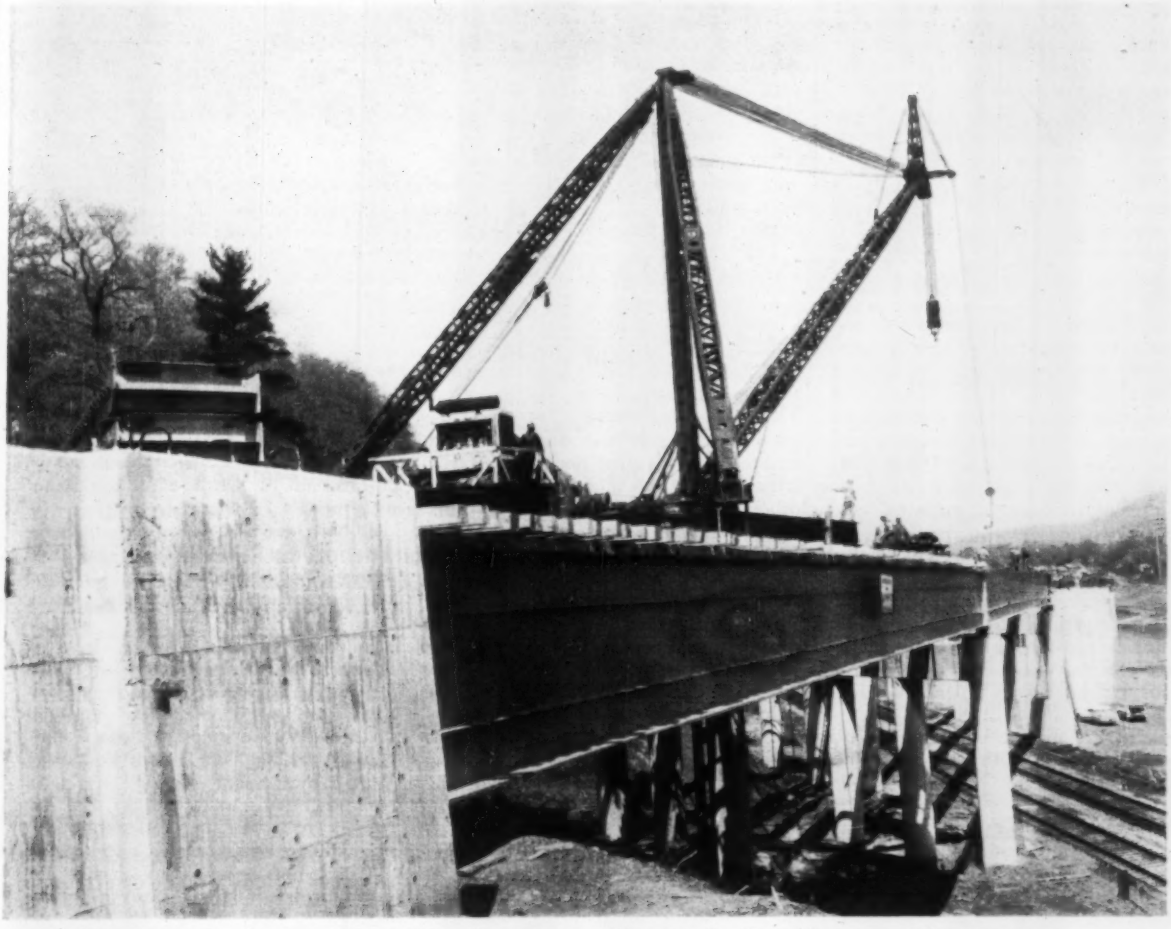
The competition is all part of nightly games in the Engineer's Softball League, held in Manhattan's Central Park.

School Straddles Street to Avoid Split

When the School Board in Concrete, Wash., decided to build a high school, it found that the largest available tract of convenient land was bisected by a deep cut and an airport road. To make the building continuous, it was constructed to bridge the road. A library and home economics department are above the road. Architects are Charles and Clarence Reger, of Tacoma.



165 ft girders traveled 17 miles from plant to bridge site . . .



. . . 45 ton members were placed over tracks and river by traveler crane.

A ten-span welded plate-girder bridge will carry four-lane Route 17 over the Chemung River and the New York Central Railroad tracks, just west of the Corning, N. Y., business district.

The largest girders weigh 45 tons and are 165 ft long. They were trucked to the site from Elmira, N. Y. The steel was fabricated and erected by American Bridge Division, U. S. Steel Corp.

Bridge design was by the New York State Department of Public Works. General contractor is the Dalrymple Gravel & Contracting Co., of Elmira, N. Y.

Work to Double in 25 Years, AIA Hears

Economist sees fast step-up in construction of schools, apartments, institutions — growth in other types

Some 2,000 architects gathered in Cleveland last week to talk about business prospects, financing and codes. They bestowed some honors, elected officers and paid passing tribute to the consulting architect's perennial protagonist, the package builder. They also voted to oppose extension of the east front of the Capitol.

The occasion was the annual meeting of the American Institute of Architects.

JOHN N. RICHARDS
New AIA president

• **Prospects are bright**—Optimism was in evidence. Robinson Newcomb, economics consultant of Washington, D. C., told an audience that his studies for ENGINEERING NEWS-RECORD show that design workloads will double in the next 25 years. From the present level of $50 billion a year, construction volume will climb to $100 billion, he predicted. Particularly rapid growth will take place, Mr. Newcomb said, in construction of schools, apartment houses, charitable institutions and some types of commercial buildings. Other types of commercial construction will grow at a healthy rate, he said, along with industrial and one and two-family residential construction.

Mr. Newcomb's optimism on homebuilding was amplified by Nels Severin, president of the National Association of Home Builders. He predicted that the homebuilding industry will produce an average of 1.6 million houses a year in the decade beginning in 1965. That volume will just take care of basic shelter requirements, he indicated, and may be swelled by the much greater potential market.

But the business is not going to be handed to the builders on a silver platter, Mr. Severin said. Better design is a must. This thought was echoed by Royal Barry Wills, Boston architect, who is well known for his modifications of the Cape Cod cottage. "There's a 'crack in the picture window' too big to be ignored," Mr. Wills said. "Shoebox modern is quite gone."

• **Why money sources dry up**—Money for construction is coming from sources that change daily, the architects were told by Edmund E. Thomas, partner in the New York City realty and mortgage brokerage firm of Brooks, Harvey & Co. The trick is to know who's putting up money the day you need it. It may not be the lender who came through yesterday and who will do so again tomorrow, Mr. Thomas indicated, for "most institutions are in and out of the market spasmodically. It is common practice for a lender to commit many millions and then stay out of the market for comparatively long periods."

• **Chaotic codes**—Hotel architect William B. Tabler, of New York City, let loose a blast at artificial restrictions in building codes and labor practices. One city prohibits a thing, he said, while another city requires it. Boston, New York, Washington and Los Angeles, for example, rule out drum traps in bathtubs, Mr. Tabler declared. At the same time, Dallas, Denver and a lot of other cities require them. Why? "Because it requires more material and labor and costs every house owner about $50 more per bathroom."

Similar code differences that don't make sense exist in site-use regulations, number and width of exits, ceiling heights, occupancy limits and stairway requirements, Mr. Tabler pointed out. "Do we [architects] really instruct people how to build," he challenged his audience, "or do we go to the building official to see if it is permitted by the code, who checks with the inspector, who calls union headquarters and gets the answer?"

"My recommendations are simple and two in number," Mr. Tabler said. "One—recommend national codes and two—acquaint the American people with some of the major injustices that affect building construction. Let's ballot on recommended codes and assemble and publicly expose a list of 25 or 50 of 'unwanted' restrictive practices.

"We must assume the leadership and responsibility inherent in our profession or we are doomed," he declared.

• **Don't outlaw package builder**—The perennial fly in the consulting architect's ointment—the package builder—had no official place on the agenda, but he was not forgotten. "The package dealer is meeting a very real need today," warned Vincent G. Kling, Philadelphia architect who delivered the convention keynote address, "and instead of trying to prove he is not, we had better concentrate on how we can meet that need better. . . . The age of the new master builder may be upon us, and we better make sure it includes us."

Mr. Kling compared the indignation aroused in some quarters of the architectural profession by the package builders to the feelings generated 50 years ago by the advent of the general contractor. The angry cry for some to "outlaw the imposter" and the prediction by others that the package builder will die of attrition are neither reasonable nor possible, Mr. Kling told his listeners. "This is a case to be tried not before the courts of law but before the building-buying public."

To win the case, Mr. Kling said, the consulting architects must match the client's broad requirements and specialized demands with equally broad and equally specialized service. "It is not enough to be experts in design and techniques. We must have at our ready disposal expert knowledge and skills in law, taxation, finance, real estate, land planning and economics. And we must demonstrate capacity—not merely enthusiasm—to handle large and complex projects."

It boils down to two alternatives for the architect, Mr. Kling indicated: Being a "full-fledged architect" or being a technician on somebody else's team.

• **Toledo architect heads AIA**—John N. Richards, senior partner of Bellman, Gillett & Richards, Toledo architectural firm, was elected new president of the AIA. He succeeds Leon Chatelain, Jr. Philip Will, Jr., of Perkins & Will, Chicago, and Henry L. Wright, of Kistner, Wright & Wright, Los Angeles, were named first and second vice presidents, respectively.

Chief honor bestowed during the weeklong assembly was the award of the Institute's Gold Medal to John W. Root, Chicago architect. Fred N. Severud, civil engineer of Severud, Elstad & Kruger, New York City consulting engineer firm, received a newly created award called Allied Professionals Medal for achievement in the design professions related to architecture.

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Resources Funds May Hit $850 Million

Federal water spending to top '58 by $150 million; President expected to sign bill, with complaints

Congress is ready this week to put the finishing touches on water resources appropriations bill for fiscal 1959. The actual price tag, still to be determined, will be in the vicinity of $1,100 million. About $850 million is expected for construction of projects.

The Senate passed a public works bill last week that would provide $1,159 million. Earlier, the House had put its approval on a $1,077 million measure. Now, Congress has to adjust these differences. Then it will go to President Eisenhower for his signature. His acceptance is expected, but not without some grumbling.

• **President's objections**—First, the Senate bill is some $82 million higher than President Eisenhower had originally budgeted for public works. The House stuck fairly close to the Administration's request. But in the normal give and take between the branches of Congress on money bills, a compromise at about the half-way mark is expected.

The White House also might complain slightly about the potential inflationary aspects of the bill. The House added $15.8 million for beginning 29 water resources projects with an estimated ultimate cost of $322 million. The Senate approved every one of the 29, and added 30 more projects. For these it voted to appropriate $18.4 million to start work during this fiscal year. Estimated eventual cost of the 30 projects is $428.5 million.

• **Big increase over '58**—The Senate bill contains about $890 million for construction, but the final amount will be around $850 million. Even this is a whopping increase over water resources construction appropriations in recent years. The fiscal 1958 bill carried $675 million, which was about the same as passed for fiscal 1957.

The Corps of Engineers gets the bulk of the increase; the Senate bill contains $700 million, compared to the $510 million the Corps received in 1958. Most of the expected compromise cuts will come out of Corps money.

Bureau of Reclamation gets $153 million for construction from the Senate, compared to $142 million in 1958 (both figures include Upper Colorado money). Actually, USBR may not be as well off as it appears since the Upper Colorado appropriation jumps from $34 million in 1958 to $66 million in fiscal 1959. The small bread-and-butter type bureau projects actually shrink in volume.

• **Projects and the costs**—The Senate Appropriations Committe has laid great stress on seven of its 30 new-start projects. It recommends $8.5 million to start the jobs, which have an estimated eventual cost of $357 million.

The seven, all within the province of the Corps of Engineers, with initial recommendations for this fiscal year and eventual estimated cost are:

- Arkansas River bank stabilization—$4 million; $56.6 million.
- Elk City Reservoir, Kans.—$300,000; $23.5 million.
- Hudson River, N. Y., channel deepening—$300,000; $35.5 million.
- Pike Island Lock and Dam, Ohio River—$1 million; $59.8 million.
- Green Peter Reservoir, Ore.—$1.3 million; $56.4 million.
- Big Bend Reservoir, S. D.—$600,000; $83.9 million.
- Summersville Reservoir, W. Va.—$1 million; $41.2 million.

• **Crops' share**—No matter what the outcome of the legislative compromise, Corps of Engineers will get the big cut of the public works money.

Major increments of the Corps' allowance, as voted by the Senate, include: $11.4 million for new surveys and studies; $115 million for general maintenance and operations; $630 million for general construction, and $70.9 million for Mississippi River flood control work.

• **Reclamation's job**—The Interior Department's Bureau of Reclamation, under the Senate version, would get $263.7 million, about $17 million more than provided in the House bill. Included in the Senate bill is $153 million for construction and rehabilitation, including these new starts:

- Burns Creek, Idaho, dam and power plant, $500,000.
- Presser Creek Dam and Reservoir, part of the Washoe project in California-Nevada, $800,000.
- McMillan Delta, New Mexico, brine reduction at the headwaters of the Pecos River, $225,000.
- Lower Rio Grande Valley rehabilitation of irrigation and drainage works, Mercedes Division, $500,000.
- San Angelo, Tex., multi-purpose project, $800,000.

In the Missouri Basin project of the Reclamation Bureau, the Senate voted $42 million for construction of three new and continuing projects.

There was no disagreement between House and Senate figures on other major public works appropriations. They are: Bonneville Power Administration, $30.1 million, including $20.9 million for construction; Southwestern Power Administration, $735,000; and Tennessee Valley Authority, $16.8 million.

Eastward Move

Pennsylvania grants first sewage lagooning permit

Pennsylvania has authorized a sewage stabilization pond for populous Allegheny County near Pittsburgh. It will be an interim treatment plant for a housing development and will be replaced when conventional treatment facilities are available in the area.

The system consists of the usual large shallow ponds, where oxygen produced by the action of sunlight and algae stabilizes the raw sewage.

The state's Sanitary Water Board will not consider any similar installation until this plant has operated satisfactorily for one year. The subdivision developer has put $22,500 in escrow for two years to guarantee proper operation of the plant or to pay the cost of a substitute conventional plant.

This plant is the first in Pennsylvania and is evidence of the spreading acceptance of lagooning even in the heavily populated Northeast. Because U.S. Public Health Service standards require an acre of lagoon for every 100 persons served, the lagoon system has been more popular in the West.

Reservoir Site Slides In the Nick of Time

Construction of a huge 10 million gal water tank in the San Francisco area had just begun this April when a landslide occurred within 200 ft of the site. The job was halted while a trench was excavated above the slide to determine its cause.

As it turned out, the slide came at just about the right time. Investigators found a zone of poor material that indicated another slide might follow. Engineers of the East Bay Municipal Utility District, Oakland, are now looking for another site.

The tank to be built is a 204 ft dia prestressed concrete design with dome. The original site was a shale and sandstone hill in Contra Costa County near Selby, which was found to contain an unstable clay zone.

When finally built, the reservoir will be the second largest tank type in the world, according to EBMUD.

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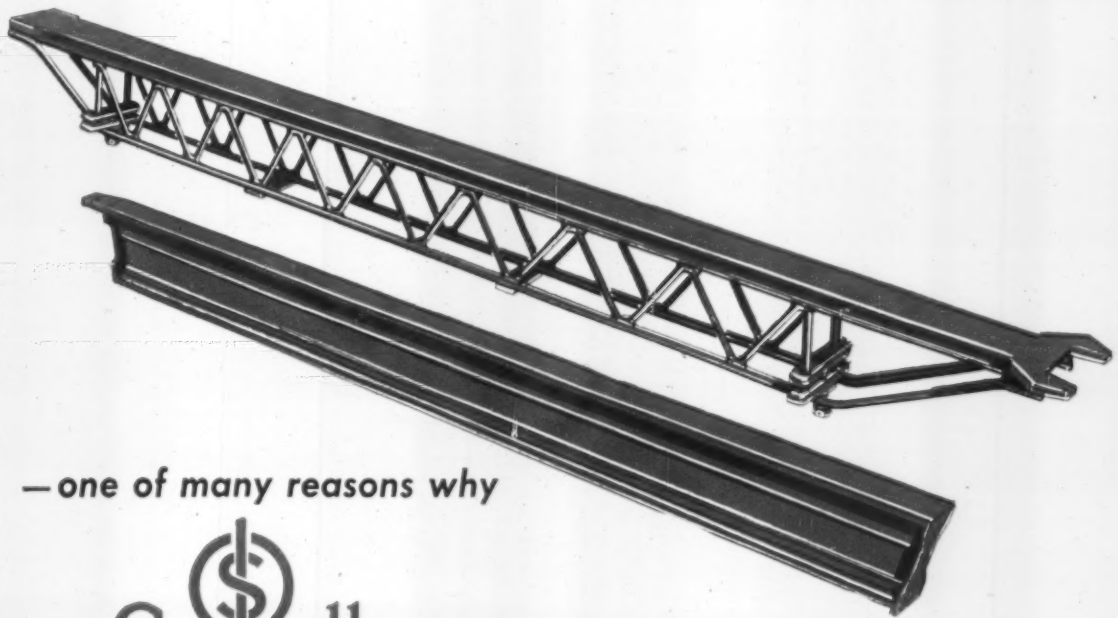

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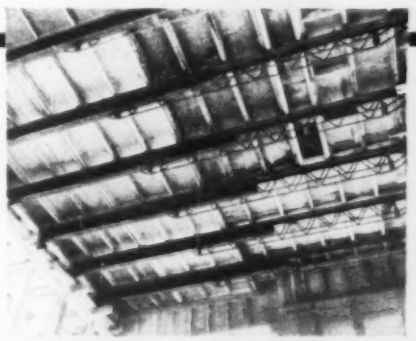

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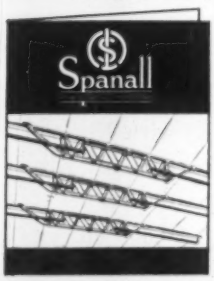

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Caterpillar DW20 (Series E) Tractor with No. 456 LOWBOWL Scraper is pushloaded by a D9 Tractor equipped with a pushcup. With eight other DW20s it is working on construction of runways, taxiways and other facilities at Bergstrom A.F.B., near Austin, Texas. Altogether, the DW20s are getting up to 20,500 cu. yd. in a 20-hour working day on hauls of 1 to 2½ miles round trip.

Job report on Bergstrom

Nine DW20 Tractors and 17 other pieces of CAT-built equipment are at work on this 2,370,000 cu. yd. project.

Near Austin, Texas, the H. B. Zachry Company is building runways, taxiways and other facilities for the new Bergstrom Air Force Base. This is a big operation—2,370,000 cu. yd. of excavation. In addition, it calls for 300,000 yd. of select base material and 503,000 yd. of concrete pavement. The runways are 12,250 feet long, 300 feet wide.

Work started in April, 1957, and is being handled by nine DW20s (Series E) with No. 456 LOWBOWL Scrapers, two D9 Tractors, six D8s, two D7s and seven No. 12 Motor Graders.

The DW20s are getting up to 20,500 cu. yd. in a 20-hour working day. Rough material, too—clay, limestone conglomerate, shale and black gumbo. Round-trip hauls have varied from 1 to 2½ miles.

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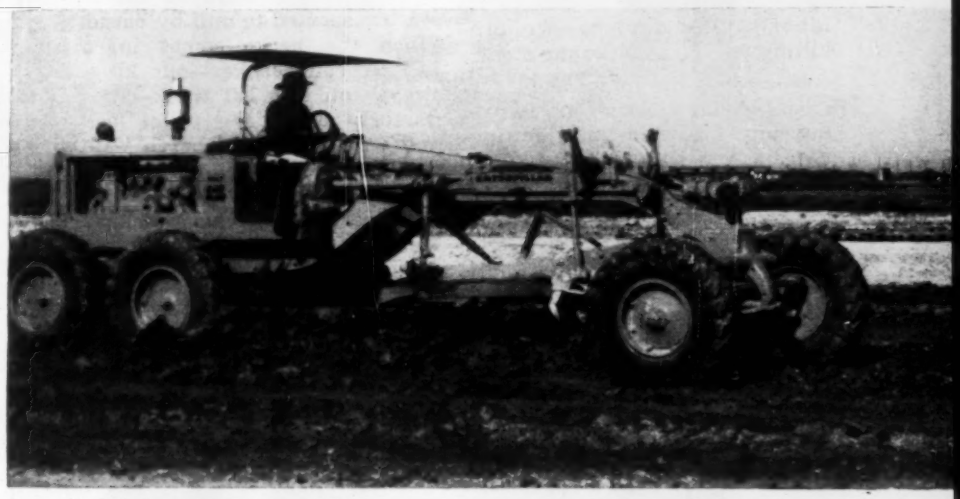

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by R. G. LeTOURNEAU

In this pushbutton age, when the laborer is fast becoming a push button operator instead of a muscle man—and as we continue the spirit of invention in labor-saving devices—we are killing two birds with one stone.

Nowadays the lumberjack, for example, has an easier job, working with machinery and getting twice as much done. Meanwhile, the man that formerly would have had to help him is running a machine in the factory that builds the machine the lumberjack is using in the woods.

Forty or fifty years ago, firewood and pulpwood were sawed up by hand. But it's different today because we have power saws to cut it with. Of course, we don't use much firewood any more, but we use lots more pulpwood, which is pretty much the same.

Even though we do have power saws to cut the pulpwood down and buck it up, we are still doing too much hand labor getting it out of the woods, hauling it to the railroad or barge, unloading it, and so on.

We recently came up with a solution for a Southern company. It employs a new 6-wheel pulpwood hauler, which we call a Log Buggy, that straddles a pallet 2 cords wide (8 ft.), 2 cords long (16 ft.) and 3 cords high (12 ft.).

Our Log Buggy straddles this pile, picks it up, and runs off with it—35 tons in one piece—then sets it down on the landing and goes back after another load.

On this operation, the pallets are transported to mill by barge. When the barge comes in, a LeTourneau Stacker—our king-size 35-ton fork lift truck—slips its forks under the pallet load and walks onto the barge with it, stacking the pallets close together. When it is desirable to save space, the Stacker can stack the pallets two high because they are built to dovetail together. Over at the mill, another Stacker will reverse the operation, unload the pallets, dump the load off and send them back on the barge so the Log Buggy can take them back to the woods for another load.

Whether you use a barge or railroad to transport the pulpwood, this push-button handling system will work just as well. It's all so easy when you have the right machines.

And, of course, making the right big machines is our specialty. We make the fastest-operating offshore oil drilling rigs in the industry, the world's only real jungle-clearing machinery, and a lot of other big machines that get the work done better, cheaper and faster. Maybe your business needs some of the same . . . if it does, let's sit down together and work out the problems.

R.G. LeTourneau

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R-109

Chicago Ruling Encourages Private Garage Builders

New ordinances approved by the Chicago City Council are expected to stimulate construction of privately owned parking garages in the city. Solid walls, sprinkler systems and other costly building requirements will be eliminated by the ordinance changes.

City Hall observers say that the move was made to spur Chicago Transit Authority plans to build garages near outlying transit stations. "Bird cage" type structures, instead of conventional walled buildings, already have been constructed by the city at several Loop locations and at sites near the North Side. Similar structures now can be built by private interests.

Briefs . . .

• **Florida safety code**—The Florida Industrial Commission has adopted the state's first industrial safety code, which forbids workmen from riding on construction hoists (except for maintenance work) and requires effective grounding of portable electric power tools. Need for the code was pointed up by the Duval County Courthouse job last year in which seven were killed and others seriously injured. Employers may be fined $100 for failing to observe code requirements. Workers will be penalized 25% of compensation if they are hurt while violating safety regulations.

• **Paper waste curbed**—Brown Co., largest pulp and paper concern on the Androscoggin River in New Hampshire, recently started full operation of a $5.5 million sulphite waste recovery plant, thus eliminating the major single source of pollution in the Androscoggin. The firm's pulp and paper operation was converted to a magnesium-base cooking process that permits the recovery of magnesia and sulphur. Similar to two other magnesia plants in the Pacific Northwest, the new recovery plant can handle nearly all the sulphite waste from the 400 ton-a-day Brown pulp mill on the Androscoggin.

• **State sewerage aid clarified**—Pennsylvania's Justice Department has ruled that municipalities that construct intercepting sewers discharging into a sewage system of a joint municipal authority are eligible to receive state aid. The subsidy, granted for sewage treatment facilities, currently is paid at the rate of 2% yearly on the annual cost of projects. Pennsylvania is in the vanguard of a current trend by states to supplement federal construction grants for sewage treatment projects. The state is reported to be considering a grants program based on construction cost.

Built-in optical plummets eliminate plumb bobs save set-up time...improve accuracy

Gurley OP-57

Gurley OP-137

The Gurley Optical Plummet Transit (Model OP-57) has proved itself to be such an important time and money saver in the field that this optical plummet feature has also been added to the Model 132 Standard Precise Transit. The new transit will be known as the OP-137.

Both these Optical Plummet Transits will save you time and trouble in setting over a point. The OP-57 and OP-137 eliminate the swing and sway of the cord and plummet—exasperating and time consuming. You will especially appreciate the increased accuracy on windy locations.

By rotating the instrument 180°, you can be assured of positive centering.

The Gurley Optical Plummet Transits are furnished with tripods which have built-in shifting heads. They allow a two-inch shift of instrument over the point, providing greater latitude in initial set-up.

Model OP-57 is recommended for very exacting work; the OP-137 for general engineering and construction work because of its shorter telescope, smaller size and its lighter weight.

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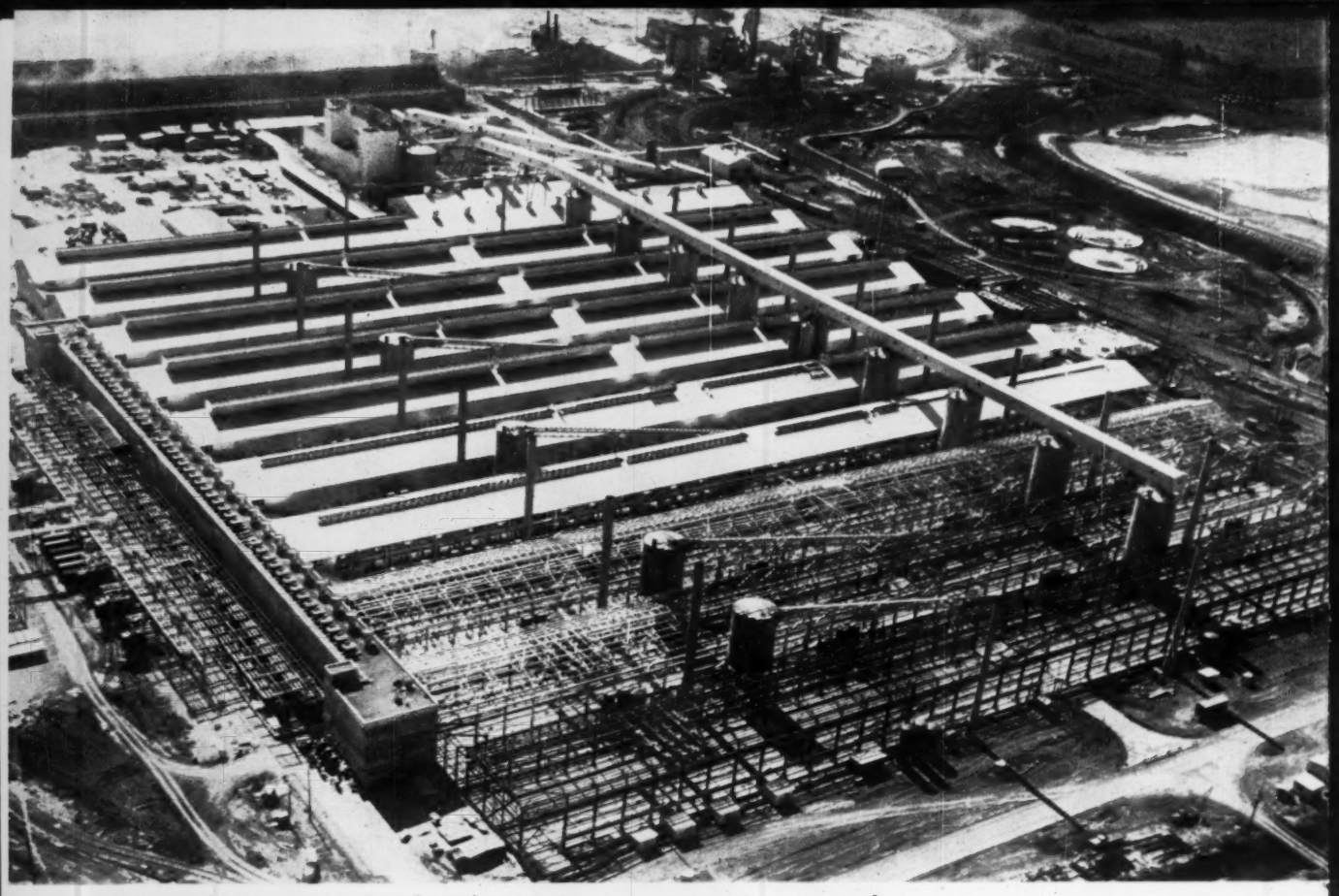


Huge plant's equipment foundations are a concrete jigsaw puzzle . . . .

Built With 12,000 Precast Pieces

The variety and number of precast and prestressed concrete shapes needed to support 504 reduction pots made building a tough job at Reynolds Metals Co.'s new aluminum reduction plant in Listerhill, Ala.:

- Stub columns for the 504 pots called for large grout holes down the center.
- Bus brackets, pot beams and floor slab columns totaled over 6,200 pieces alone.
- The need for ventilation through the floor required casting of over 200,000 holes through the floor slabs.
- Only two weeks were allowed for performing concrete erection in each building.

A rectifier building and nine buildings 67 x 900 ft for electrolytic reduction pots form the main part of the project. Pot buildings are steel framed with aluminum roofs and siding. Each building houses 56 steel pots supported in a raised concrete floor system independent of the building frame.

The Texstar Construction Division of Texas Industries received the subcontract for the precast prestressed concrete work in February, 1957. Reynolds' schedule required that the first building be ready for erection of precast work on July 1, 1957. At least a month production lead time was needed to meet this date. This left just three months to plan and build the casting yard, and design, detail and produce the forms needed for the job.

• Planning—The schedule called for installation of six reduction pots every day. With 56 pots per building, this allowed just two weeks erection time for all the concrete work in each building. Some 1,300 pieces of concrete were required per building. Keeping to the schedule meant moving in and erecting approximately 130 pieces each working day.

About the same number of each precast element was needed in each building. The easiest system would have been casting all of one type before going on to the next. But this method had to be discarded due to the short production lead time allowed by the construction schedule. A production cycle of three buildings was used instead. This required a more complex casting yard setup and more changeovers in the pouring schedule. The yard and storage area was located close to the plant site for ease of performing erection operations.

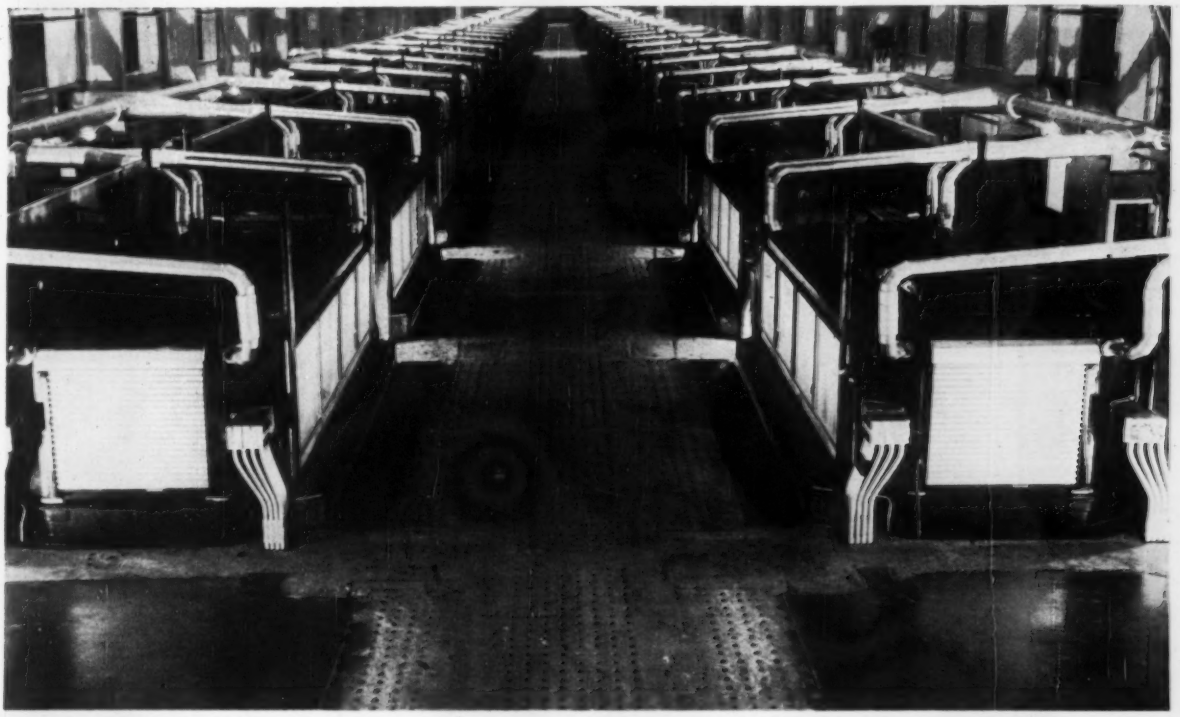
Heavy rain held up construction of the casting yard until April 1. The casting yard utilities (water, light, power and steam distribution) plus access roads, storage area and pretensioning beds finally were completed in the middle of May. Forms were delivered and production of wall panels, pot beams and columns began during May. Floor slab production was started in June.

Here's how the elements were handled:

- Columns supporting the pot and floor beams were conventional reinforced concrete. The most efficient and economical way to cast the 90 required each day was to move and reuse side forms as many times as possible.

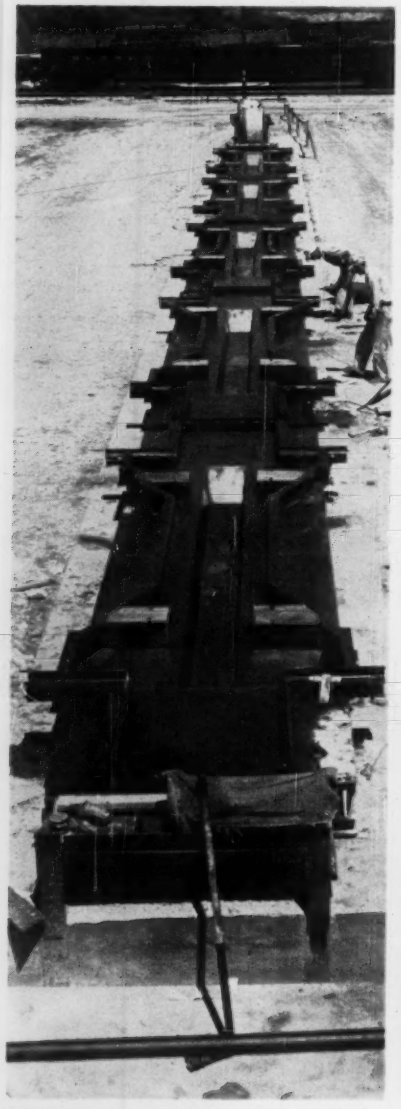
(*Story continued page 36*)

Rubber mandrels solved forming problem, making up to 400 holes each in over 500 floor slabs.



Perforated slabs allow ventilation of pot room from plenum space below raised floor.

. . . Floor slabs were the hardest item to make



PRESTRESSING BEDS worked on 48-hour cycle. This bed turned out . . .

CUSTOM TAILORED floor panels to fit between reduction cells in the pot buildings. Careful handling was needed to prevent damage to the panels during placing.

Vacuum forms allowed rapid stripping and up to five uses of a form each day. Biggest problem was forming a 12 in. grout hole down the center of each column. These were for footing dowels at the bottom and ties to the pot beams at the top. The holes were formed with perforated steel pipe sheathed with sponge rubber. Applying a vacuum to the pipe contracted the rubber enough to free it from the concrete.

• Pot beams, 16 x 21 in. and 24 ft long were produced 12 a day in a bed 290 ft long. Fourteen $\frac{7}{16}$ in. wire strands were used for the prestressing. After installation, the beams cantilevered at each end. A considerable amount of mild steel was needed to resist tension created in the top of the beams by prestressing strands. These strands were tensioned without deflection in the bottom of the beams.

• Reinforced concrete brackets for bus bars were cast 30 at a time in a three-gang mold system and steam cured for 24 hours. They are bolted to the columns and carry the aluminum bus underneath the floor.

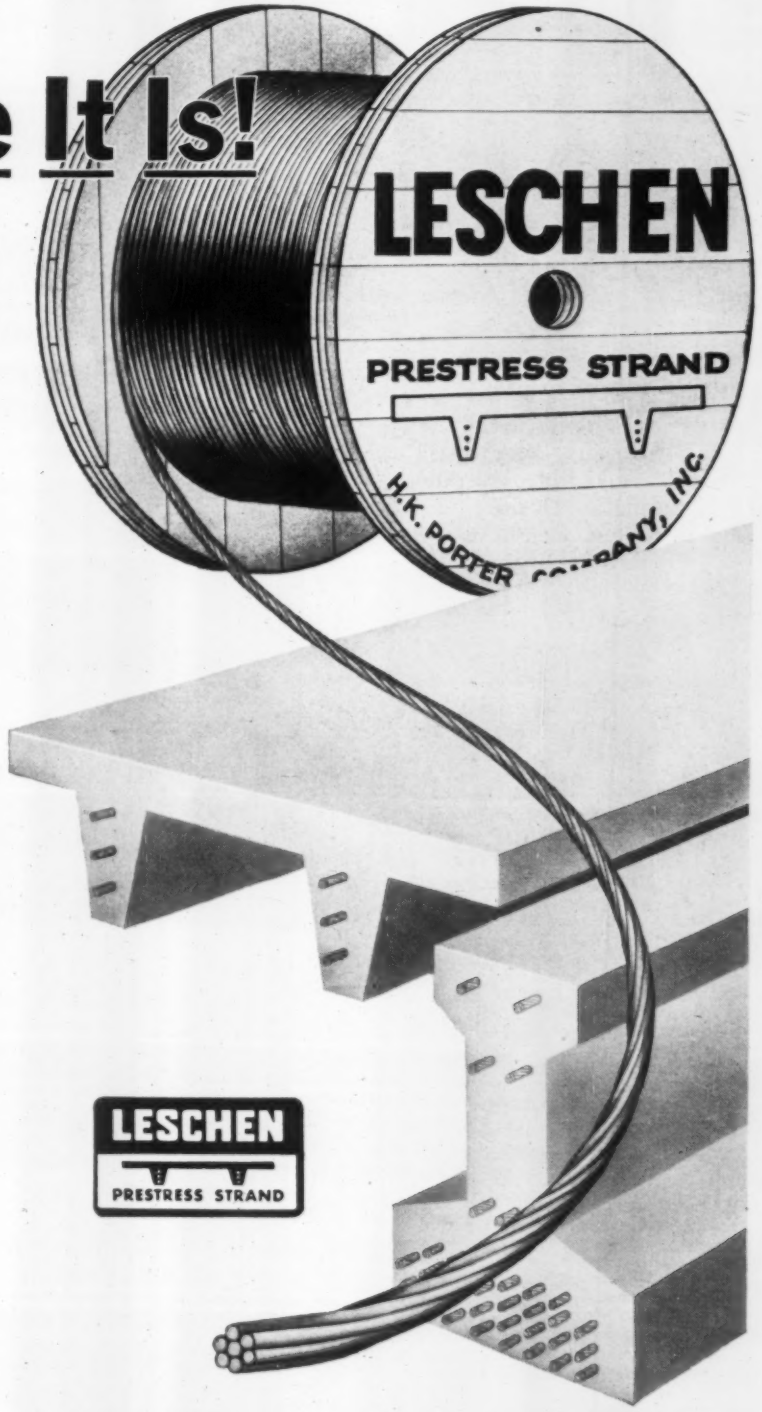
• Wall panels of reinforced concrete measured 4 x 21 ft and were 7 in. thick. They were attached to the outside of the building frame at operating floor level. Sixteen panels were made each day on a 50 x 100 ft casting bed with steel edge forms. Vacuum mats played two roles in this operation: as curing mats in order to keep a 24 hour production cycle, and as lifting mats on straddle trucks. The large panels were moved the second day by this system with little or no bending. Quick removal got around the need for a double installation of panel casting beds.

• Floor slabs were the hardest item to make. Variety of shape and loading complicated the form assemblies and patterns of prestressing wire. Worst of all were the 2 in. ventilation holes specified—up to 400 for many slabs.

High temperatures around the pots during the reduction process demand rapid change of air. The area under the raised floor system is designed as a plenum. Air pumped into this space has

Prestress Producers Asked For It...

and Here It Is!



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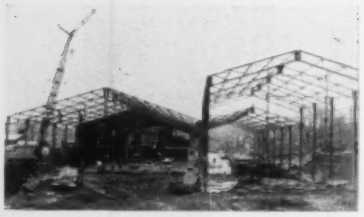

One crane is sole equipment needed and its time is ⅔ less because of fast SWISS-LOK connections.

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OPEN LANE of stub columns will support reduction pots on precast beams.

to rise literally through the floor slabs for cooling the pot room and reduction cells.

Piercing the floor slabs with 2 in. holes on 6 in. centers was the design answer to this problem. Making the slabs with these holes on the job was another question.

• **Solution**—The contractor used rubber mandrels bolted to the steel bed form to shape the ventilation holes. Greased for each use, the mandrels were rigid enough to form the correct shape, and flexible enough not to shear or bind when the stressing wires were released.

Floor loads varied a great deal throughout the pot room buildings. This meant using many different patterns and loadings of prestressed wire in the floor slabs' construction.

Because of this variety, single wire stressing was chosen as the easiest and most efficient system. A hydraulic center-hole ram with 30 in. stroke and 50 ton capacity run by electric motors was used for the stressing. The system was fast enough to keep single wire stressing up with the daily schedules.

Specifications demanded 3,500 psi concrete at the time prestressing wires were released. The one-day production cycle allowed only 14 to 18 hours for curing some of the larger pieces. Specs and schedule were both satisfied by using an 8 bag mix of high-early-strength concrete plus steam or vacuum curing for all the prestressed members. A 125 hp boiler installed at the casting yard delivered steam at 125 psi through the distribution system to the casting beds.

During peak production, crews cast 250 cu yd each day. A portable batching plant fed material to five truck-mixers which carried it to casting beds.

In terms of the entire project, the precasting operations helped overcome lost time due to construction delays. The first three pot buildings were completed 45 days behind schedule because of delays in the other trades. Casting operations had continued without slowing, however, and the contractor was able to speed up concrete erection when other trades lagged.

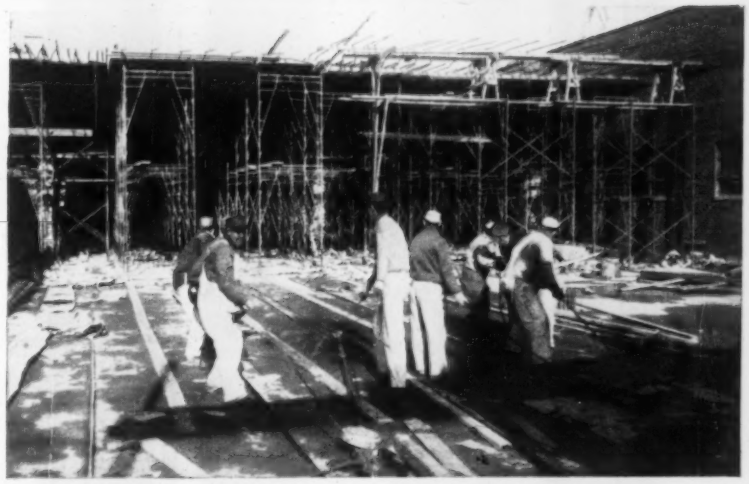
Original estimates on cost, speed and quality of the precast, prestressed concrete were accurate. Unit costs considered in terms of this special type of large industrial project prove this. Total cost, including overhead and profit, for approximately 20,000 cu yd of concrete came to only $120 per cu yd.

The floor system, including columns and slabs in place and based on gross floor area, cost $3 per sq ft. The wall panels, totaling 57,000 sq ft, cost $1.60 per sq ft in place.

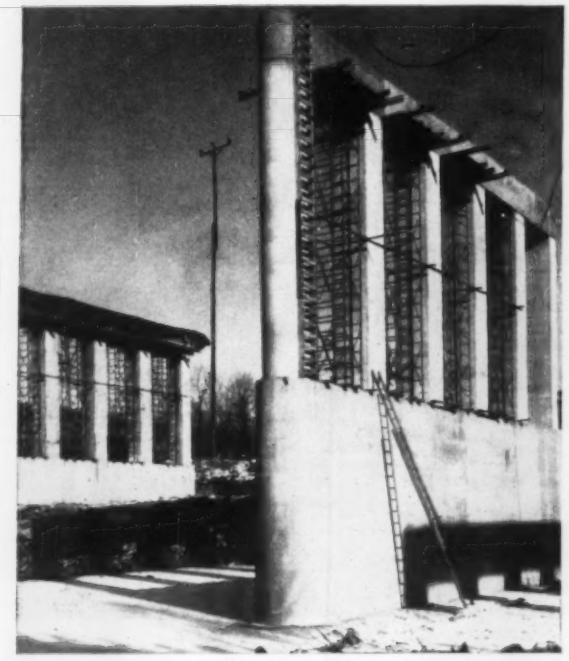
Reduction Division Engineer for Reynolds Metals Co. was R. E. Wells. H. R. Deemer was resident engineer. Ross Bryan of Nashville did the structural design of the pot room floor system. The wall panels were designed by Day & Zimmerman of Philadelphia. The general contract was a joint venture of Daniel-Edenfield-Kaighin. C. S. Carter was project manager. Texstar Division operations were managed by James J. Mennis with F. E. Koebel as assistant. C. G. Hendrix and E. D. Grandle were superintendent and project engineer, respectively, for Texstar.

Shoring Methods...

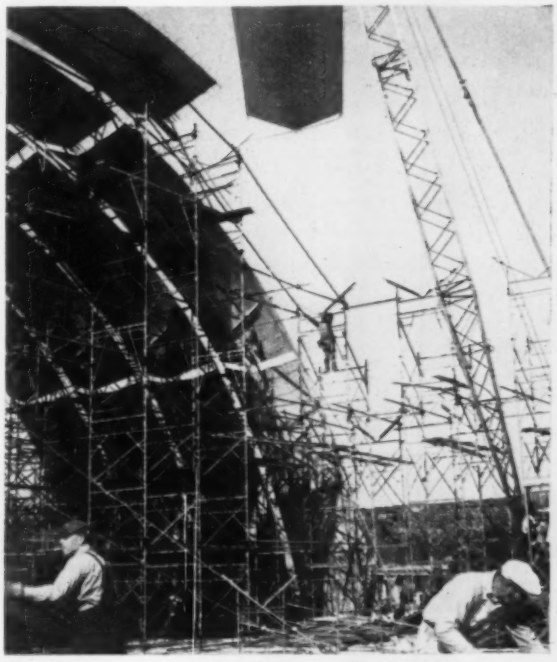
A Picture Report on Efficient Ways to Shore Concrete . . . by Patent Scaffolding Co.



FAST METHOD MOVES SHORING WITH FORMS—Soaped sills, placed under shoring legs, provide fast movement of 960 sq. ft. sections of "Trouble Saver" Shoring with formwork, to succeeding drophead panels on this slab job at Kentile, Inc., So. Plainfield, N.J. Method uses only half the shoring (462 frames) and formwork usually required, and saves the contractor, Fred J. Brotherton, Inc., considerable time, equipment and costs. Each section is moved, as shown, to its new location in just 15 minutes.



EASY-TO-ERECT PIER SHORING—"Trouble Saver"® Steel Shoring, made with 3'-wide ladder frames, provides ample support for beams on several pier capitols on this bridge in Palmyra Township, Pa. Frames, spaced 3' apart, shore capitols 3'6"-wide by 4'-thick. Built-in ladders give workers quick access for forming and stripping. Willis, Paul & Proctor, general contractor. P.S. Co. offers engineering layouts specifically detailed for every job.



CORRUGATED BARREL ROOF SUPPORT—Support for this unusual corrugated, reinforced concrete roof is provided by "Trouble Saver" Shoring towers with 104 special V-shaped cradle frames. These units, designed by P.S. Co., were set on top of the shoring frames to conform to roof segments, which measure 10' 3 1/2" wide and 2'9" deep in cross section. Holy Trinity H. S., Trinidad, Colo. Platt-Rogers Constr. Co., gen. contr.

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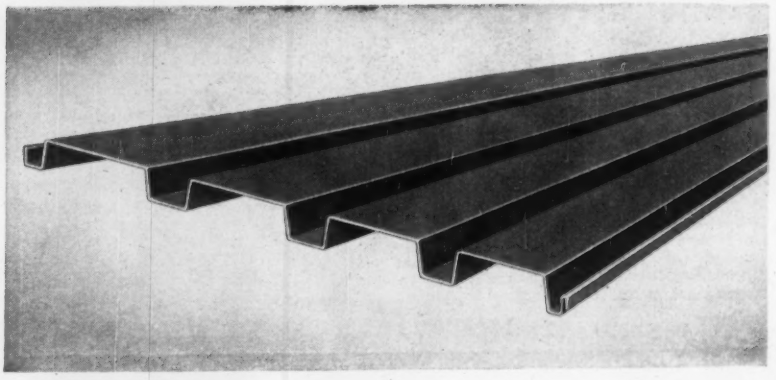

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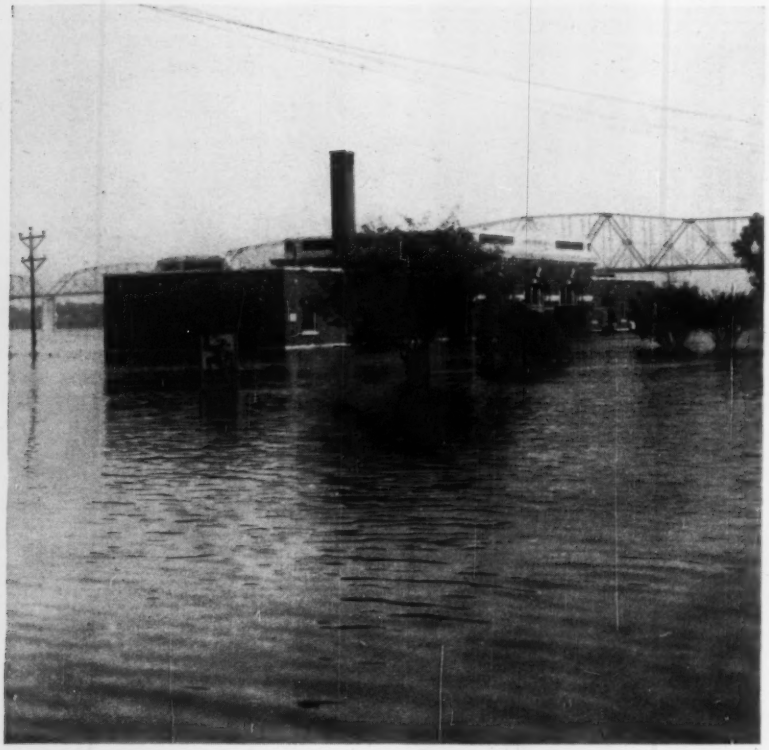
This new 21 foot high floodwall at Cape Girardeau on the Mississippi River features . . .



MISSISSIPPI FLOODS, like this one in 1951 which stranded Cape Girardeau's railroad station, will be held back by new floodwall. The city is 130 miles south of St. Louis.

Floodwall

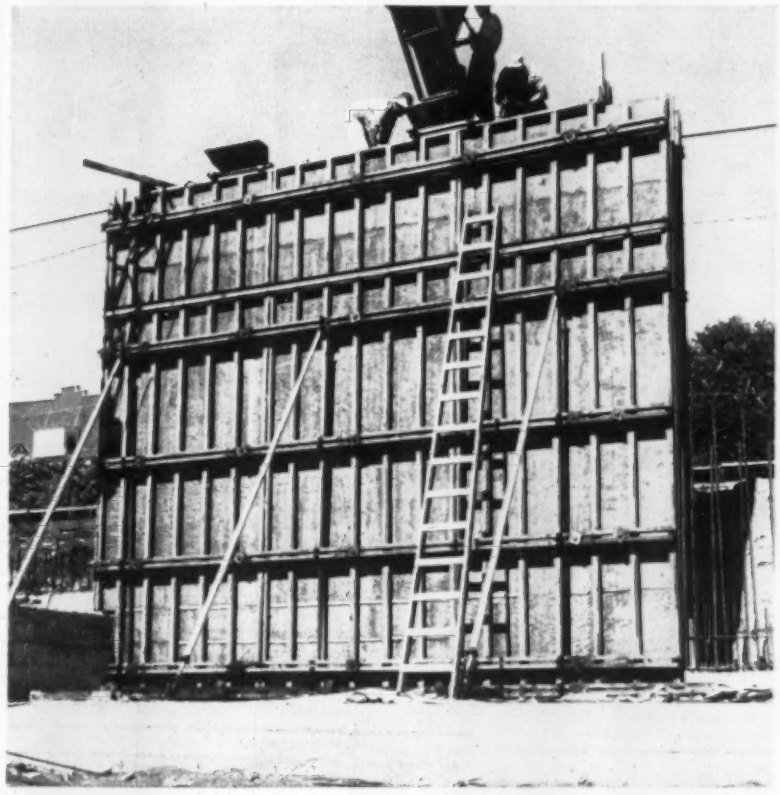
George B. Skinner
St. Louis District
U.S. Army Corps of Engineers

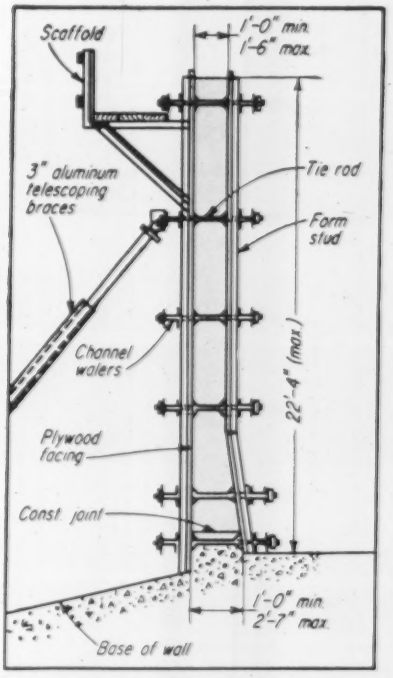
Residents of oft-flooded Cape Girardeau on the Mississippi River in southern Missouri now breath a mite easier with completion of a tall floodwall. The job includes some unusual techniques of foundation preparation and concrete forming.

The wall is designed to protect this business center against a 100-year flood. It's 1,600 ft long and averages 21 ft in height above a sloped base. Much of the wall is founded on earth, but some portions rest on rock.

Rock surfaces under the concrete had to be clean and free from oil, debris and semi-detached or unsound fragments. If surfaces, joints, solution seams, faults or cavernous conditions needed treatment, the work was accomplished by wet washing and removal of loose, weathered or detached rock.

A 310 cfm compressor was utilized for cleaning and jet-washing the crevices. Open joints, faults and seams were enlarged where necessary. The cleaned openings then were filled with cement grout, sand-cement grout, or





Prefab wood forms framed with steel walers and plumbed with telescoping aluminum braces.

Holds New Ideas for Foundations, Forms

concrete (depending on crevice size) across the entire width of the base. All horizontal surfaces were covered with a layer of mortar just before the concrete was placed. Dowel bars anchor the river-side heel of the wall where the base slab was constructed on rock.

• **Rubber water stops**—The T-type cantilever floodwall sections were built in monoliths with rubber water stops to prevent the passage of water between them. These water stops formerly were made of copper. However, it was found that rubber water stops would withstand a much greater differential settlement between monoliths without rupture of the seal.

The individual monolith sections were constructed in three major steps: The key, the base and the wall stem.

After undesirable earth was removed and satisfactory fill placed in the excavation and compacted, pre-assembled reinforcing steel was lowered into the excavated keyway. The key of the base was poured against undisturbed earth where possible.

The foundation area for the base of the wall then was graded off, base forms were constructed, reinforcing steel was placed and, finally, concrete was placed. The bottom 1 ft of the wall section was constructed integrally with the base.

Steel reinforcement in the base of the wall extends far enough up to properly lap with reinforcement in the upper portion of the wall.

• **Wall forms prefabricated**—The last major step was to construct the wall stem. It reaches a maximum height of 22 ft 4 in., with a thickness of 12 in. to 31 in. at junction with the base, and 12 in. to 18 in. at top of wall. Design of forms for these high and relatively thin wall sections was critical, if good construction progress was to be maintained. Use of prefabricated wall forms saved considerable time.

The framework for these forms was made of lightweight steel channel walers. Wooden 2x4's then were bolted in place to form the vertical members of the frame, and the form facing was made by nailing plywood to the studs. This produced a very rigid form that could be hoisted by a mobile crane and set in position.

The forms were held in place at the bottom by the stub of the wall already in place. After the wall reinforcement had been erected, the forms were set in position and held together with tie rods engaging the horizontal light weight steel walers.

• **Aluminum braces used**—The uppermost waler was located about 2 ft below the top of the form. The form was plumbed and held in place by 3 in. tubular aluminum braces extending diagonally from top to base. Connections were provided for the telescoping tubes below the top waler. They were located on the riverside of the stem, and anchored at the bottom by bolts placed in the heel of the base. The tubular braces also were equipped with turnbuckles for rapid plumbing adjustments of the forms. No other form bracing was required. Working platforms were suspended from the forms below the top waler.

The entire stem section was placed from the top by using tremies to place the concrete at the bottom of the form. The concrete was placed close to its final position in about 20 in. layers and vibrated with internal vibrators.

(Story continued page 44)

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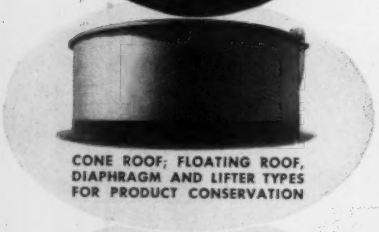

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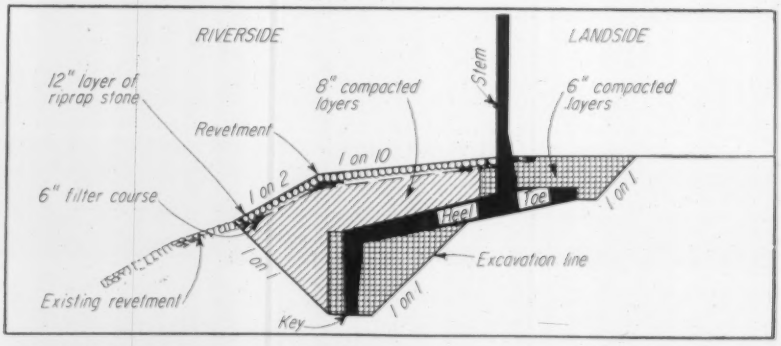
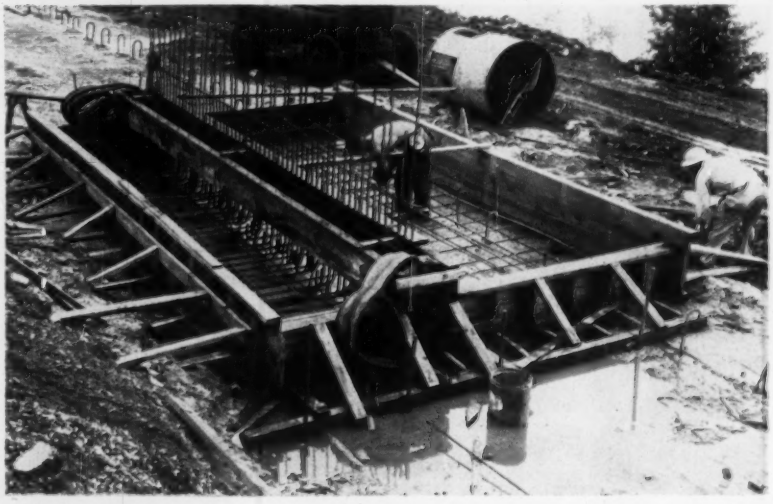
. . . Floodwalls have greater stability



ON EARTH, floodwalls are keyed into compacted and stable material while . . .



OVER ROCK, the walls are anchored to bedrock with vertical dowels.

The contractor was able to cast several individual key sections, base sections and wall sections in one operation. No noticeable slippage or movement of forms occurred during the entire concrete operation.

After the wall sections had cured, the forms were easily dismantled and transported to a new location. They were handled by cranes with 50 ft or 65 ft booms, depending on height of wall section.

Concreting of the 1,600 ft wall was completed by the contractor in about five months—it was scheduled for eleven. Contract time was 400 calendar days. Major construction items included 5,300 cu yd of concrete; 927,000 lb of reinforcing steel; 23,000 cu yd of excavation and 18,700 cu yd of fill and backfill. The contract was for $525,000.

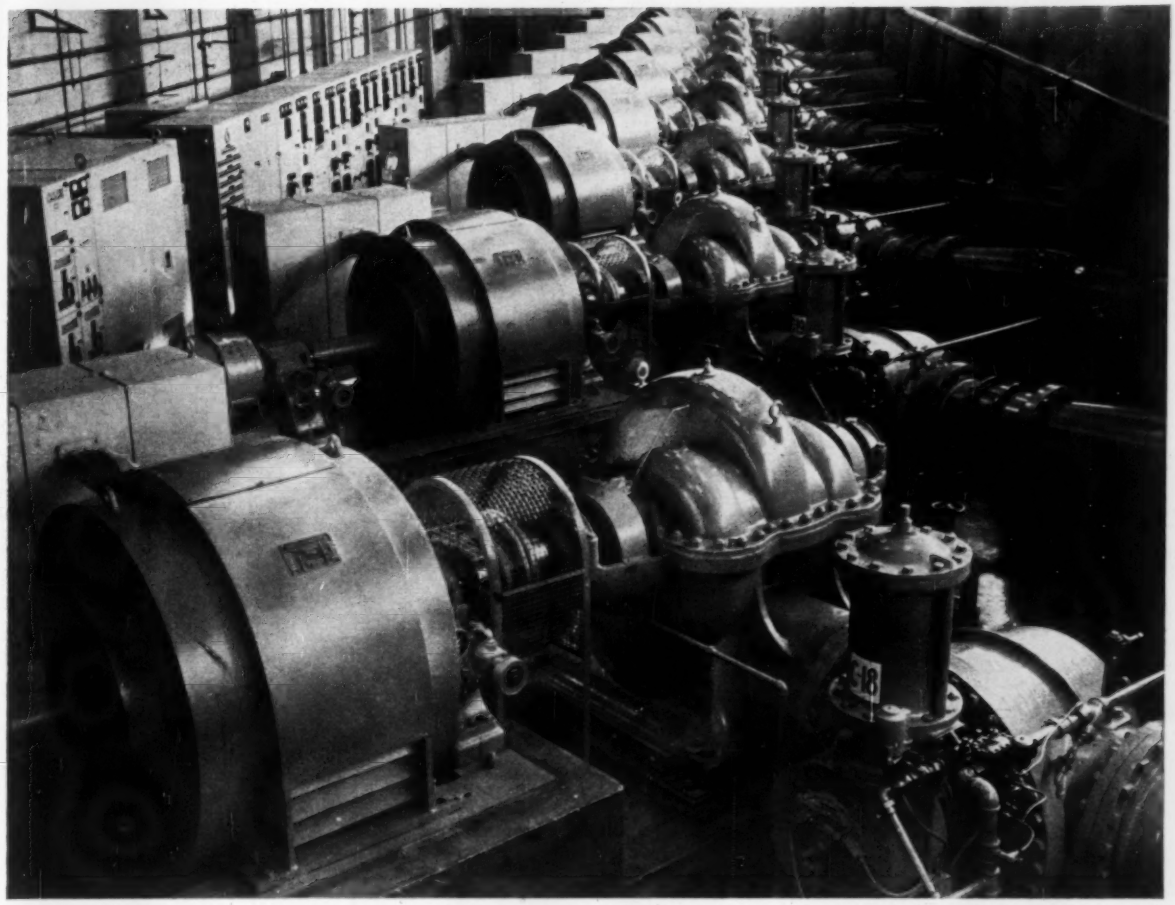
L. G. Barcus & Sons, Inc., Kansas City, Kan., was the contractor. Col. Charles B. Schweizer is district engineer of the U.S. Army Engineer District, St. Louis. Construction was under direct supervision of H. C. Shaver, resident engineer of the District's Cape Girardeau Sub-Office.

Several additional items are yet to be constructed in the flood protection system at Cape Girardeau. They include two pumping stations, of 60,000 gpm and 94,500 gpm capacities, an additional 4,100 ft of floodwall, closure structures, additional sewer alterations, and construction of a bridge over the northern boundary (Sloan Creek) of flood protection.

Degree Will Be Awarded For Watershed Management

Colorado State University will offer courses leading to undergraduate and master's degrees in watershed management in the college of forestry and range management. It will be the first full-fledged instruction and research program in watershed management in the country.

The program is being initiated with a $50,000 grant from the Charles Lathrop Pack Forestry Foundation. Assistance also will be provided by the U. S. Forest Service, whose personnel will participate in research activities.



Eight 24" SMS-Rotovalves are used for pump check service at the Secondary Pumping Station of the U. S. Air Force's Arnold Engineering Development Center in Tullahoma, Tenn.* Installed on 25,000 GPM pumping units, each hydraulically-operated Rotovalve has independent timing control for opening and closing, and a by-pass fast closure device for shut down in the event of power failure. Four more 24" Rotovalves perform similar service at the Primary Pumping Station.

CLOSE CONTROL OF TIMING MAKES SMS-ROTOVALVES CHOICE AT TULLAHOMA

When laying out the cooling water facilities at Tullahoma, Robert and Company Associates of Atlanta, Consulting Engineers under contract with the Tullahoma District, Corps of Engineers, U. S. Army, selected SMS-Rotovalves for pump check service. Close, positive control of valve opening and closing time that minimizes water hammer as pumps are cut in and out of the system made Rotovalves the first choice. Their rugged design and record for low maintenance cost were also important for this severe service.

SMS-Rotovalves' full-line opening offers no more resistance than straight pipe of the same diameter, means less head loss and lower pumping costs. Maximum initial shut-off, with retarded area reduction at the closing end of the stroke, controls water hammer. Opening and closing can be as fast as one second, or as slow as needed. Closure is drop tight, and monel-to-monel seats are self-purging.

You can obtain full information on SMS-Rotovalves, Ball Valves or Butterfly Valves by contacting our nearest representative. Or, write to S. Morgan Smith Co., York, Penna.

*Under construction by the Corps of Engineers, U. S. Army.

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1948 **Wide separation of east-west lanes of four-lane Mission Valley Road permitted use of left-side ramps. But increasing traffic made them dangerous . . .**

Left-Side Ramps Were OK at

The busiest and most dangerous interchange in San Diego is being rebuilt to meet traffic needs for the next 20 years. When built 10 years ago, the interchange utilized left-side ramps that have proven to be the source of too many accidents in rapidly increasing traffic conditions.

A $3.3 million project by the State Division of Highways will alter the Mission Valley interchange so that both U.S. Highway 395 (Cabrillo Freeway) and U.S. 80 (Mission Valley Freeway) will have eight instead of the present four lanes.

The Griffith Co. of San Diego and Los Angeles started work in late 1957. Completion of the project is scheduled for September, 1959.

Chief purpose of the project, says R. G. Luckenbach, assistant district highway engineer, is to upgrade the interchange to accommodate traffic flow from two major freeways.

Mission Valley road was a four-lane highway when the interchange was built in 1948. Now it is being built to full freeway standards. The Cabrillo Freeway is also in the process of being converted from four to eight lanes throughout most of metropolitan San Diego.

About 350,000 cu yd of dirt will be taken from a hillside south of the interchange to provide fill for the new interchange. The excavation will also permit widening of Cabrillo Freeway to nine lanes (five southbound uphill) to a point nearly a mile south of the interchange.

• **Traffic count high**—Present traffic count on the interchange makes it the busiest on the Pacific Coast south of Los Angeles. An average weekday count on Cabrillo Freeway shows: north—34,000 vehicles, south—54,000. On Mission Valley Freeway, the figures are: east—51,000, west—54,000.

The interchange was the scene of more accidents (74) in 1957 than any other intersection in San Diego.

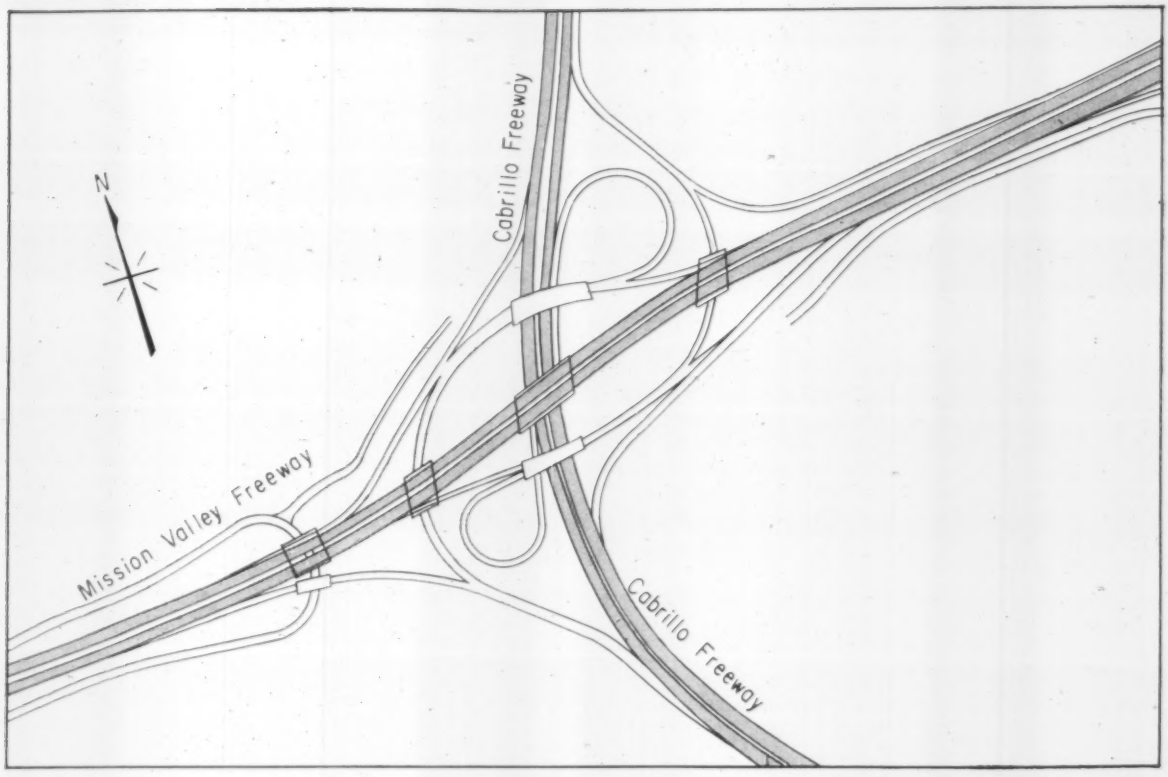
The reconstruction project will eliminate merging traffic at entrance and exit ramps on the left side of Mission Valley Freeway, both east and westbound, says District Engineer Jacob DeKema. These left-side (fast lane) traffic mergers have caused most of the accidents. Motorists and the San Diego Police Department have been particularly critical of the left-side ramps on Highway 80.

The widely separated east and west lanes of Mission Valley Freeway over Cabrillo Freeway will be converted to acceleration ramps that are designed to feed traffic into the right lanes of the new Mission Valley bridge over Cabrillo Freeway.

Interchanges with left-side entrance and exit ramps still are being built by the California highway department, says Mr. Luckenbach, but none are now proposed in San Diego County.

He defends the left-side ramps as well designed. He says they require a greater distance between ramps than conventional right-side ramps. He also says slow-moving vehicles turning on and off the left-side ramps from outside lanes of the freeway reduce the capacity of the road.

The completed interchange will have



1958 **The Mission Valley route is now a full freeway on the interstate system. So the rebuilt interchange will eliminate the left-side ramps.**

Start, But Not for Freeway

six lanes of traffic on both freeways. The eight-lane capacity will be gained through a series of ramps connecting the two.

Also included in the contract is widening Mission Valley Freeway for a half mile on either side of the interchange to eight lanes and widening of Cabrillo Freeway to eight and nine lanes for the same distance. Frontage roads will be constructed along the two freeways.

• **Partial cloverleaf**—Most of the ramps will be relocated. The result will be a combination cloverleaf and direct interchange. The old interchange was a direct design—traffic fed directly onto one freeway from the other. The new one will have two cloverleaf-type ramps, and the remainder direct.

This is not a typical design, says Mr. Luckenbach. Intersection of two freeways makes it impractical to use a full cloverleaf. This represents a different design problem—one that is controlled by the high traffic count.

Minimum curvature of acceleration ramps on the present interchange is 150 ft. On the new interchange, the curvature will range from 150 ft on the cloverleaf loops to an almost straight line.

In both structures the minimum curvatures exceeded California highway department standards. The new curvatures are: North loop, 200 ft; south loop, 150 ft; northeast ramp, 500 ft; northwest ramp, almost straight; southeast ramp, 350 ft; southwest ramp, 1000 ft; westbound ramp on Mission Valley to south on Cabrillo (using old overpass); and eastbound ramp on Mission Valley to north on Cabrillo (using old overpass), both 500 ft.

• **Construction traffic**—A normal flow of traffic, is being assured during most of the construction. Vehicles are rerouted over existing ramps and bridges, new frontage roads and ramps and short detour sections.

Traffic flow is being handled in four stages of one or more phases each. The first stage is in effect now. Here are the steps:

• Frontage roads on Mission Valley east and west of the interchange are being built and the north ramp onto Cabrillo is being relocated. Traffic will continue on present ramps and bridges except for temporary detours for bridge construction.

• The six-lane Mission Valley overpass will be built and the south ramp onto Cabrillo will be relocated. Through traffic on Mission Valley Freeway will be rerouted on ramps, detours, frontage roads and one side of the present highway.

• The overpass will be paved and bridges and connecting ramps will be built. Traffic will be routed along Mission Valley in the same manner as during the second stage. It will be juggled from side-to-side of Cabrillo Freeway.

• Cabrillo Freeway will be widened to six lanes. Passenger traffic will be routed along one or the other side of the freeway.

Mission Valley Freeway is part of the interstate system and Cabrillo Freeway is not.

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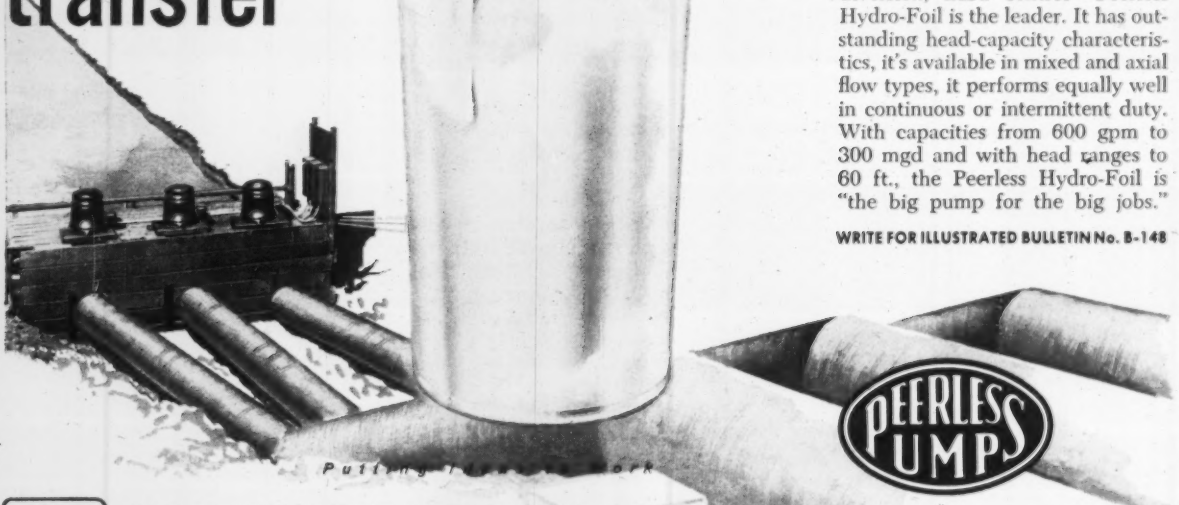

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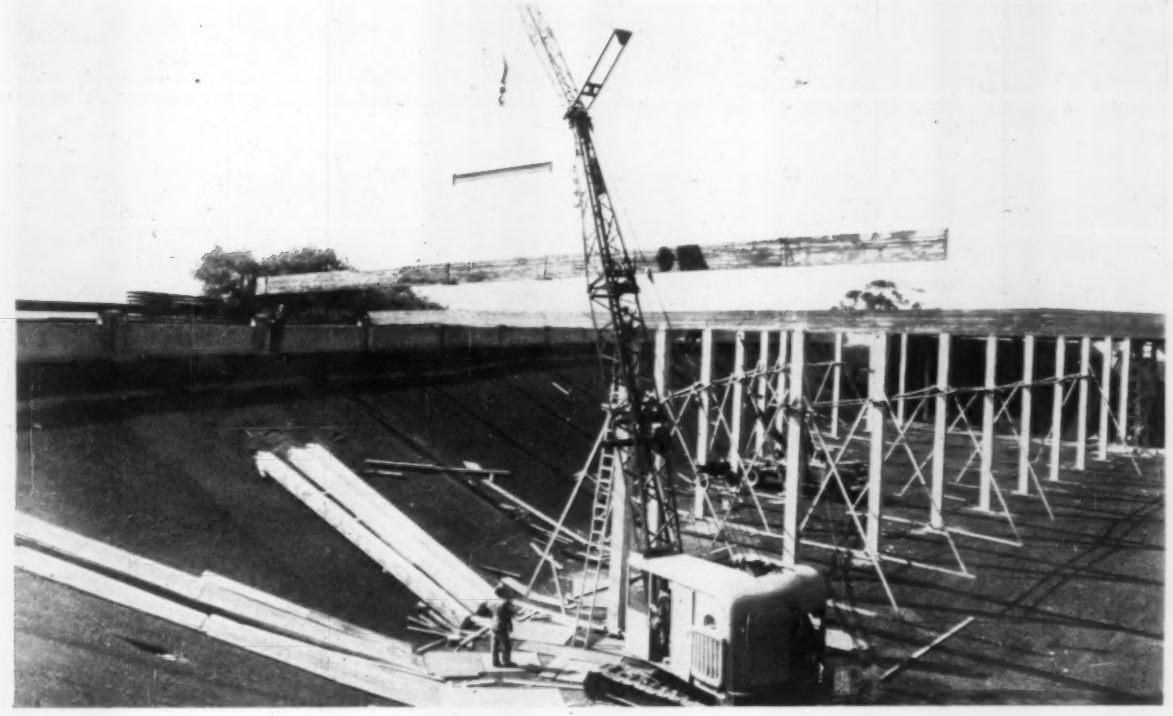

Asphalt lining and simple wood roof are . . .

Two Keys to a Low-Cost Reservoir

A 7.5 mg reservoir built near San Francisco has an unusual combination of elements that result in relatively low cost:

- An asphalt lining consisting of 8 in. thick impervious stabilized base course, 4 in. thick coarse asphaltic drainage layer and prefabricated asphalt panels as an impervious membrane.
- Simple roof structure combines precast concrete columns, glued laminated timber girders, wood purlins and joists, and a plywood membrane.

Cost of the reservoir is $241,500, or $32,200 per mg of capacity. Of this amount, the roof is estimated to cost $1.17 per sq ft or $10,320 per mg. Recent cost of concrete roofs for similar reservoirs have been about $2 per sq ft. The lining is figured to cost 97¢ per sq ft, or $8,908 per mg.

Middlefield Reservoir is being built for the Alameda County Water District, which covers some 60,000 acres on the east side of San Francisco Bay south of Oakland.

The new basin is centrally located in the district on a hilltop site. Some grading—about 28,000 cu yd—was necessary with earthmoving accomplished by carrying scrapers. Material from the reservoir basin was compacted around the rim and on a downhill slope as a precaution against future slides.

After detailed studies, the district's consultant concluded that an asphaltic lining would be most economical. In addition, the asphaltic lining would offer good resistance to cracking from earthquakes or settlement. The reservoir is situated only 75 yd from the Hayward fault, which triggered the March, 1957, California earthquakes.

The reservoir lining actually has two impervious layers—the prefabricated panels and the stabilized base course. If leakage should develop, drainage is provided. This includes a complete system of drain pipes between the coarse plant-mix layer and the stabilized base. The drain lines surrounded by rock filters are carried around all toe slopes and transversely in the reservoir bottom. The carefully designed lining will prevent any leakage into the subgrade, which might endanger stability of the site or cause other property damage.

• **Asphalt treated base**—The reservoir base course is an 8 in. thickness of asphalt treated stabilized base spread in two 4 in. layers. A test showed that adding 6% of SC2 asphalt to the natural sandy clay would make an almost impervious base. The material was mixed by mobile, pugmill units and spread by bulldozers. On the 2 to 1 slopes, the base was compacted by vibratory rollers. Conventional rollers were used on the bottom. Since the reservoir is located substantially above the water table, design provision for uplift pressure was not necessary.

To provide an underdrain for the reservoir lining, the base course is topped by 4 in. thickness of porous asphaltic concrete. This is made by mixing 3½% of 60 to 70 penetration grade asphalt in a hot plant with ¾ in. maximum aggregate. The aggregate is deficient in fines with 60% to 70% being on a ¼ in. screen.

Some difficulty was encountered in placing and rolling the coarse mix. A spreader box was tried, but it was not suitable. A Barber-Greene paver did the job satisfactorily. However, it appeared to a number of observers that additional fines in the aggregate as well as elimination of ¾ in. rock would simplify construction and result in a smoother lining that would still have the desired porosity.

On the asphaltic work, rollers were winched up and down the side slopes by a tractor. The paver was also supported on the side slopes by a tractor winch.

• **Prefabricated asphalt panels**—Final

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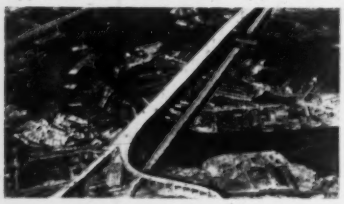
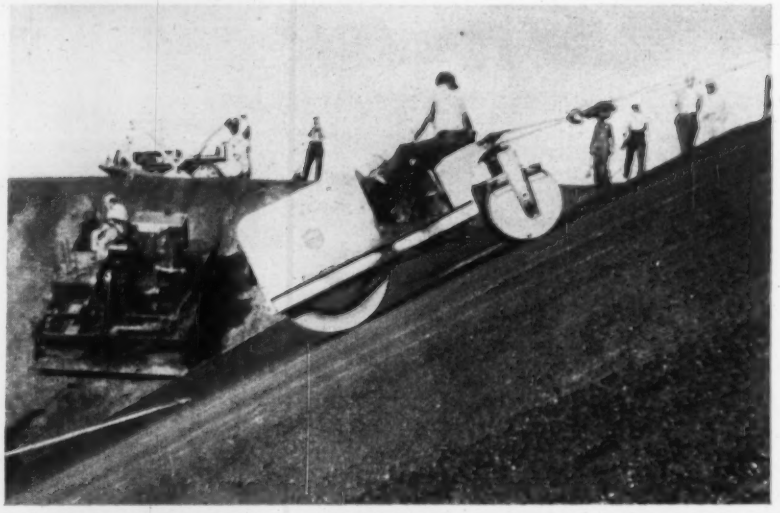
Typical **WELD-CRETE** Applications



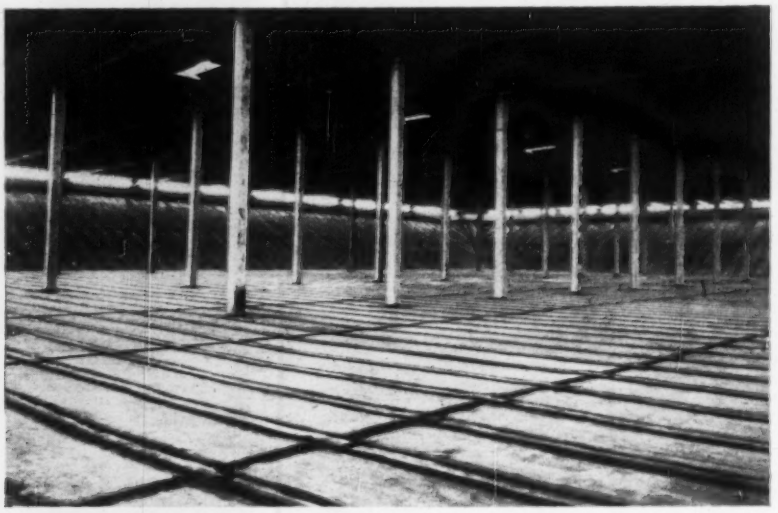
GRANVILLE ST. BRIDGE, VANCOUVER, BRITISH COLUMBIA—One of the largest 8 lane bridges in North America. Here Weld-Crete was applied to bridge surface to bond cement dividing strips. Now, over 4 years later, bonds are as good as new. *General Contractor:* Dominion Bridge Company.

SEVEN CORNERS SHOPPING CENTER, FALLS CHURCH, VIRGINIA—During construction of this 600,000 sq. ft. structure, initially only part of floor was poured and floated to a smooth finish. Areas in which show windows would be added were poured as base slab only. Slab was coated with Weld-Crete. After store fronts were custom-built, delayed toppings of 1" to 1½" thick were poured with assurance of permanent bond to base slab. These toppings were then finished with asphalt tile, wood, or finish flooring of lessee's choice. Designed and constructed by The Kass Realty Co. of the Kass-Berger Organization under direction of J. Franklin Groff. *Concrete Contractor:* Moses-Ekco.

. . . Reservoir is paved with porous and fine layers



ROLLER IS WINCHED down reservoir sideslope to compact drainage layer of coarse asphaltic concrete. Maximum rock size is ¾ in.



ASPHALT PANELS make reservoir watertight. Panels are supplied in 23 ft lengths. Lapping at the end and additional strips on the sides seal the membrane.

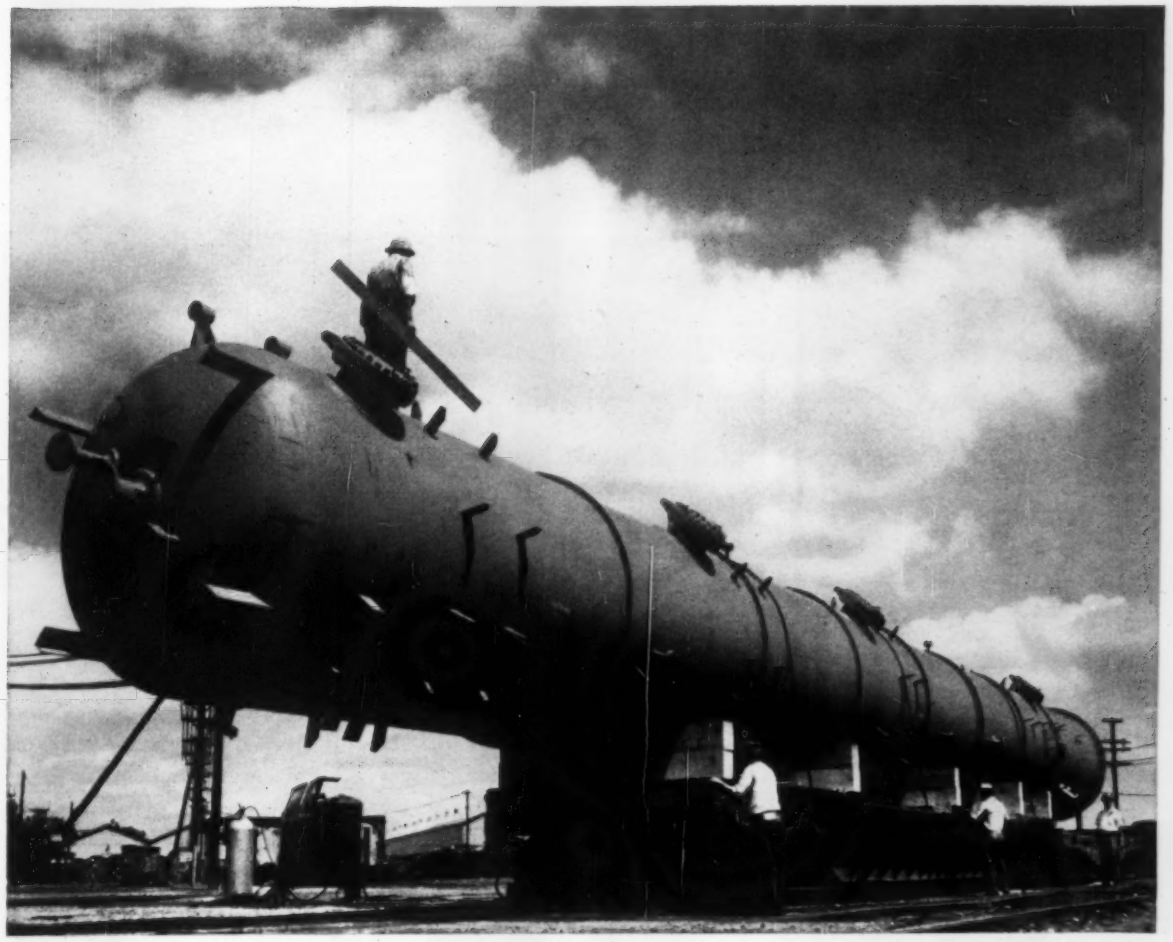
element in the lining is a mat composed of panels of prefabricated asphalt. These came 23 ft long, 4 ft wide and ¼ in. thick. Joints between the asphaltic panels are sealed by an 8 in. strip of similar material ⅜ in. thick cemented with hot mastic.

Asphaltic panels of this type have been used extensively to line old concrete reservoirs and as a single layer lining on some earthfill reservoirs. This is the first application of the material over a porous asphaltic surface. The lining will conform to subsurface variations and move with any settlement of the reservoir base. Its only drawback is that care must be taken in reservoir cleaning operations.

At Middlefield Reservoir, asphaltic panels are sealed to all concrete structures with hot mastic. The panels are fastened with percussion studs driven into the concrete. At the parapet, the studs are driven through galvanized steel strips, 3 in. wide by ⅜ in. thick, to provide greater resistance to sliding of sheets on the side slopes. Steel strips and studs then are covered with a thick mastic application.

Around column footings and all other concrete structures, the studs are driven through 2 in. dia steel washers that are sealed over with a second layer of panel cemented down with a heavy mastic application.

• **Wood roof diaphragm**—Middlefield Reservoir is roofed by a plywood diaphragm supported on precast concrete columns. Although wood roofs



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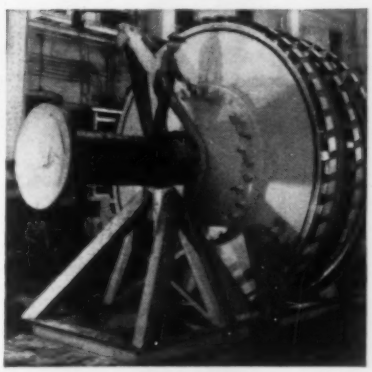

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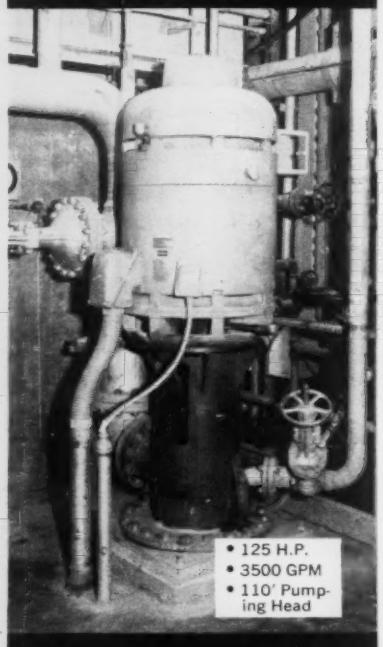

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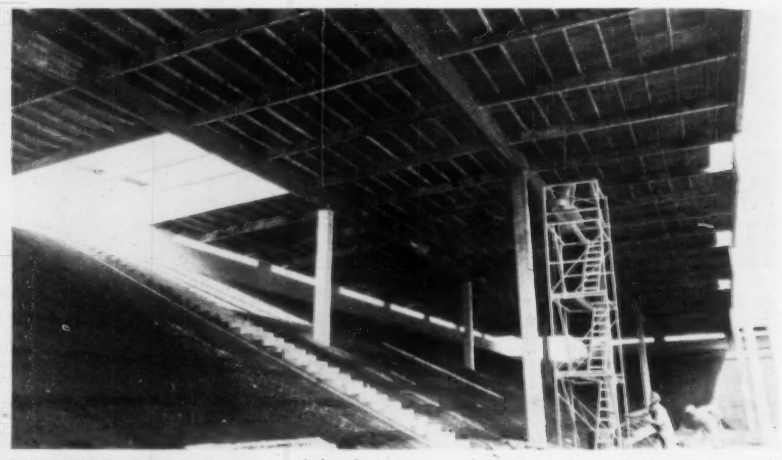
. . . Wood roof is supported by precast columns



PLYWOOD ROOF is supported by 2x4 joists and 4x12 purlins. Purlins frame into glulam girders. Plywood membrane and joists were preassembled.

have been used on reservoirs for many years, there have been few new major reservoirs employing this type of roof structure. The wood design has the advantage of lower cost and it's easier to install than a precast or prestressed roof system. Its light weight makes earthquate resistant design of the roof structure easier.

Footings for the 14x14 in. precast concrete columns were cast after installation of the base course; the base course was simply cut out to the required dimensions. Bolts cast into the bottom of the columns were used to plumb the columns on a steel plate cast in the top of the footings. When in proper position, leveling nuts were welded to the plate and to the bolts. The entire steel leveling assembly was then grout packed.

Columns in the 300x240 ft reservoir are spaced on 20x50 ft centers generally.

Spanning between columns are glued laminated timber beams 5¼ in. thick and either 21⅛ or 22¾ in. deep. Longest timber pieces are 79½ ft. The heavy girders cantilever from the columns with a simple bolted connection at the ridge and a hinged connection for shear transfer just short of the first column.

Spanning the 20 ft between girders are 4x12 timber purlins on 8 ft centers. Spanning between the purlins are 2x4 joists. The roof diaphragm is a ⅜ in. thick plywood. Plywood panels and joists were preassembled before erection.

The entire roof assembly acts as a diaphragm for earthquake resistance. The roof is bolted to piers in the 4 ft high parapet walls. These piers resist lateral thrust of the roof—there being no moment connection between column and roof.

Although formed in 1914, the Alameda County Water District has up until recently performed only water conservation and minor water service functions. Most of its area, however, was included in the incorporation of a new city (Fremont) two years ago. The area has great potential for future growth with present population of 33,600 expected to increase to 500,000 in 50 years.

The new Middlefield Reservoir, as the first major unit of the district's water distribution facilities, may set a pattern for many more future facilities. Most of the present water supply comes from wells, although there is service connection with San Francisco's Hetch Hetchy system. Future water may be delivered by elements of California's Feather River Project.

• **Men behind the job**—M. P. Whitfield is chief engineer and general manager of the water district. The reservoir was designed by T. C. Binkley, consulting civil engineer of Palo Alto, Calif., with Jerome B. Gilbert in charge. Neil Warren, consulting structural engineer of Palo Alto, designed the roof structure. Soils investigations and some of the asphalt investigations were conducted by Woodward, Clyde, Sherard & Associates of Oakland.

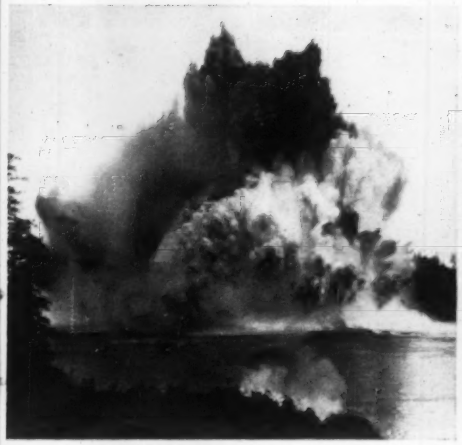
General contractor on the construction program was Elmer J. Freethy of El Cerrito. Glued laminated girders were provided by Standard Structures of Healdsburg, with the remainder of the roof structure provided by Berkeley Plywood of Berkeley. All of the wooden members were pressure treated with Chemonite by J. H. Baxter & Co. at its Alameda, Calif., plant. The panel lining was supplied by Globe Linings, Inc., of Long Beach, with installation by Mallot & Peterson of Oakland.

0.5 seconds

1.0 seconds

1.5 seconds

The little puff of smoke in the foreground is a signal bomb for the photographer



2.0 seconds

3.5 seconds

7.0 seconds

2,750,000 pounds of Du Pont "Nitramex®" 2H Removes Ripple Rock

Why it was chosen for this biggest of all blasts . . .

For Its Safety—The inherent safety of blasting agents helped win the nod for "Nitramex" 2H over conventional dynamites for a complex coyote blast of this sort.

For Handling Convenience and Water Resistance—Packed in hermetically sealed metal containers easily carried and stacked, and producing no headache from handling, "Nitramex" 2H was a natural.

For Strength—Plenty of energy was needed to knock off two underwater peaks, and "Nitramex" 2H supplies power equal to 80% Gelatin, higher than any other blasting agent.

For High Density—The blast required extremely heavy charges. "Nitramex" 2H, with the highest density of any commercial explosive, insured getting the required loads where they were needed regardless of size of coyote.

For Shattering Power—The high velocity and power of "Nitramex" 2H was needed to insure adequate breakage and dispersal of rock in order to provide required channel depth without dredging.

Your Du Pont Explosives representative can show you a Du Pont Blasting Agent that can improve *your* blasting. E. I. du Pont de Nemours & Co. (Inc.), Explosives Department, Wilmington 98, Delaware.

DU PONT BLASTING AGENTS

DU PONT

Blasting Supplies and Accessories

Better Things for Better Living . . . *through Chemistry*

Mahon ROLLING DOORS

STEEL CURTAINS OF ALL MAHON DOORS ARE BONDERIZED

Illustrated here are Two of Five Mahon Power Operated Rolling Steel Doors installed in the Udylite Corporation's new plant, Detroit, Mich. Architects: O'Dell, Hewlett & Luckenbach. General Contractor: Barton-Malow Company.

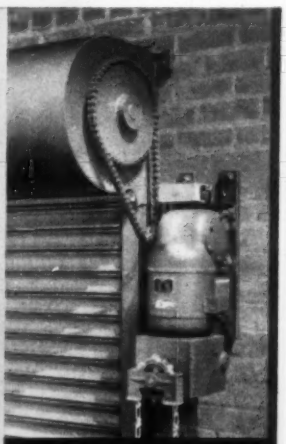
Serving the Construction Industry Through Fabrication of Structural Steel, Steel Plate Components, and Building Products

Offer the Permanence and Security of Steel

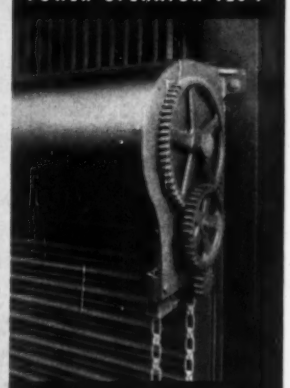
. . . Greater Protection Against Intrusion and Fire!

In Operation, the Fast, Vertical Roll-up Action Saves Valuable Time and Space — No Overhead Tracks to Restrict Headroom

MANUALLY, MECHANICALLY, or POWER OPERATED DOORS
STANDARD or UNDERWRITERS' LABELED



MAHON STANDARD POWER OPERATOR 920-P



MAHON CHAIN-GEAR OPERATOR

☆ OTHER MAHON BUILDING PRODUCTS and SERVICES:

- Insulated Metal Curtain Walls
- Underwriters' Rated Metalclad Fire Walls
- M-Floors (Electrified Cellular Steel Sub-Floors)
- Long Span M-Decks (Cellular or Open Beam)
- Steel Roof Deck
- Permanent Concrete Floor Forms
- Acoustical and Troffer Forms
- Acoustical Metal Walls and Partitions
- Acoustical Metal Ceilings
- Structural Steel—Fabrication and Erection
- Steel Plate Components—Riveted or Welded

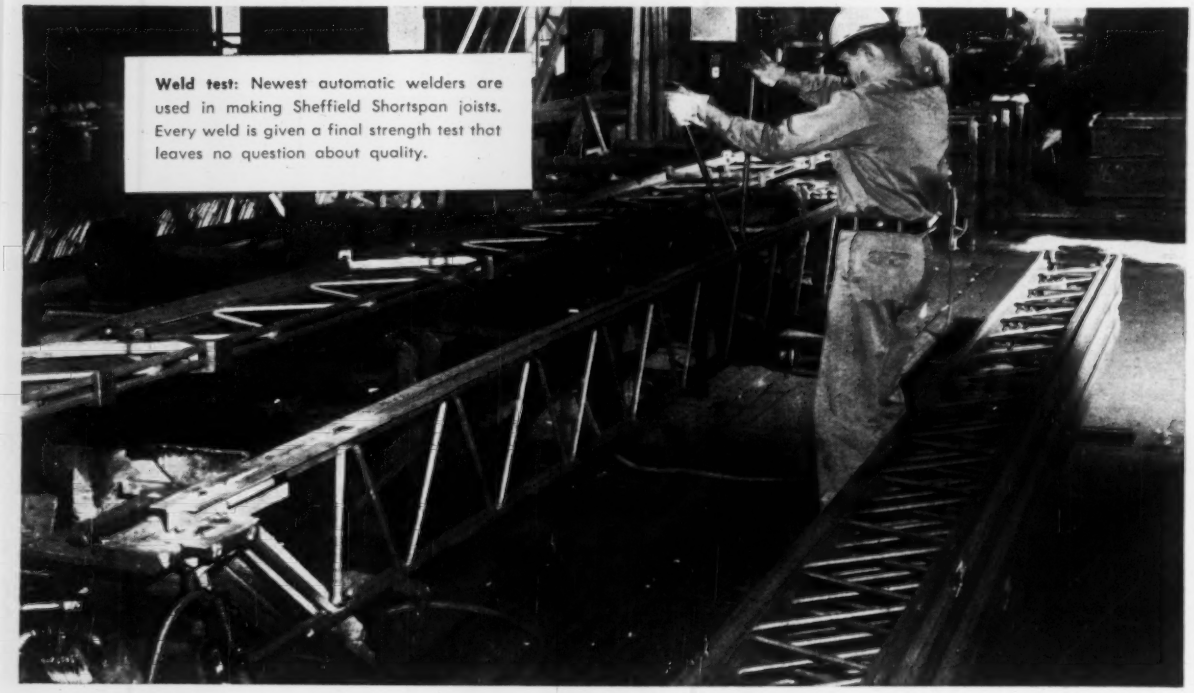
☆ *For INFORMATION See SWEET'S FILES or Write for Catalogues*

THE R. C. MAHON COMPANY • Detroit 34, Michigan
Sales-Engineering Offices in Detroit, New York and Chicago
Representatives in all Principal Cities

of Steel and Aluminum

MAHON

SHEFFIELD QUALITY CONTROL AT WORK



Weld test: Newest automatic welders are used in making Sheffield Shortspan joists. Every weld is given a final strength test that leaves no question about quality.

Why quality is a sure thing in Sheffield Shortspan Joists

SHEFFIELD

ARMCO®

Open-Web Shortspan Steel Joists

STEEL JOIST INSTITUTE MEMBER SJI

Sheffield Shortspan Joists are made to conform to exacting SJI standards

Every Sheffield Shortspan Steel Joist meets the rigid requirements of the Steel Joist Institute. SJI 3-way quality control includes:

1. Complete investigation of Shortspan steel joist designs submitted for Institute approval.
2. Physical tests to supplement and substantiate theoretical analysis of design.
3. Quality Verification Program which includes inspection at fabricating level to assure the joists produced are in accordance with approved design.

No room for doubt. Nothing left to chance. Uniform top quality and dependable, predictable load-bearing performance are things you can count on in every Sheffield joist.

That's because Sheffield quality control goes all the way. From furnace to finished joist. It starts with critical inspection of raw materials. It continues with most advanced chemical, electronic and mechanical tests through every step of steelmaking and joist fabrication.

You can count on fast delivery, too, thanks to Sheffield's latest high-speed, high-precision production equipment. And to Sheffield's strategic plant locations. You're assured quick service that helps keep your jobs on schedule, and enables you to take full advantage of the money-saving, time-saving benefits of open-web shortspan joist construction.

Get in touch with your nearest Sheffield office.

SEE OUR CATALOG IN SWEET'S OR WRITE FOR COPY

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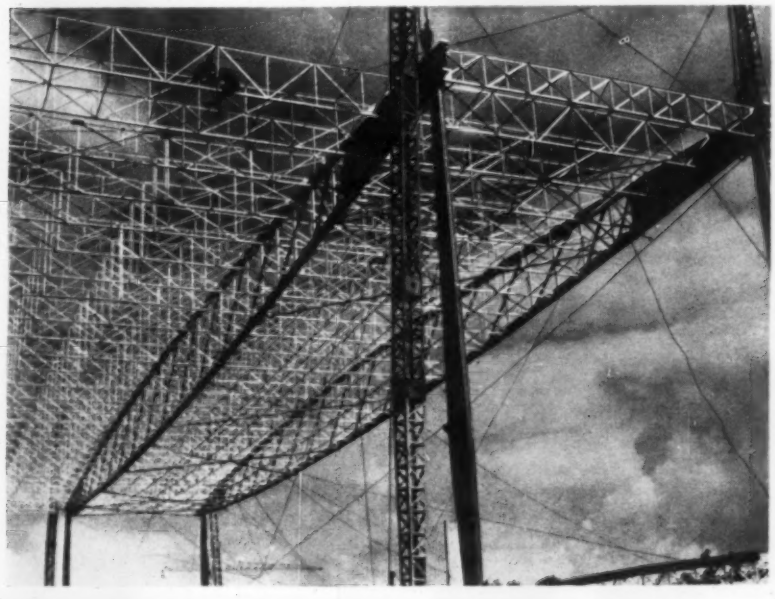
SHEFFIELD DIVISION ARMCO STEEL CORPORATION SHEFFIELD PLANTS HOUSTON • KANSAS CITY • TULSA



Imagination in aluminum pays off . . .

Belgians Win $25,000 Prize

For their use of aluminum in the design of the Transportation Pavilion at the Brussels World Fair, six Belgian architects will receive the $25,000 R. S. Reynolds Memorial Award for 1958. The American Institute of Architects, administrator of the competition, presented the award at the AIA convention in Cleveland last week.

Established last year as a memorial to the late founder of Reynolds Metals Co., the prize is given annually for the "most significant contribution to the use of aluminum, esthetically or structurally, in the building field."

Shown under construction in the photo, the huge prize-winning building is a 643 x 226 ft open pavilion for exhibits of the Belgian transportation industries. Principal frame members of the roof are 19 fish-belly trusses built mostly of aluminum. Spanning the width of the building between steel columns, they are connected by secondary members, and the entire roof frame is covered top and bottom with corrugated aluminum. Wind bracing for the building is made up of cables that incorporate springs.

The six prize winners are Thierry and Frederique Hoet-Segers, Henri Montois, Robert Courtois, Jacques G. Bara and Robert M. de Hase. The AIA jury that made the selection consisted of Arthur L. Harmon (chairman of the group), Pier Luigi Nervi, Richard J. Neutra, J. Roy Carroll, Jr., and Richard M. Bennett.

Cultural Center Slated for Montreal

A three-unit cultural center estimated to cost $13.5 million will be built in downtown Montreal. The first unit to go up, a $6 million concert hall, now is being designed and is expected to be completed in late 1960.

Besides the concert hall, which will seat 3,100, the project will include two theaters with seating for 1,250 and 500, respectively, and a restaurant. Plans were announced last month by Sir Georges Etienne Cartier Corp., a public body created to build the center.

At present the provincial government has committed itself to provide $2.5 million for the project and the City of Montreal has adopted a borrowing by-law for $2 million. The Corporation hopes that the city will equal the provincial grant, leaving the balance of the money to be provided by the public. The project was planned in such a way that, if necessary, construction can proceed by stages as funds are forthcoming.

The Raymond Loewy Corp., New York City, planned the general design of the buildings and will help the Corporation coordinate efforts of architects and engineers.

Affleck, Desbarats, Dimakopoulos, Lebensold, Michaud & Sise has been retained as architect. Brouillet & Carmel is the structural engineer. Friedman, Heywood, Duquette & Angus will be the mechanical engineers. All are Montreal firms.

Consult an Expert

Mining engineers can aid underground construction

Because "civilization has reached a stage where it appears that men may have to go underground," civil and mining engineers should work together as a team on every underground project. That's what two Canadians recently told the Engineering Institute of Canada's 72nd annual meeting at Quebec City. The speakers were A. V. Corlett, head of mining engineering at Queen's University, Kingston, Ont., and C. L. Emery, professor of civil engineering at Waterloo College, Waterloo, Ont.

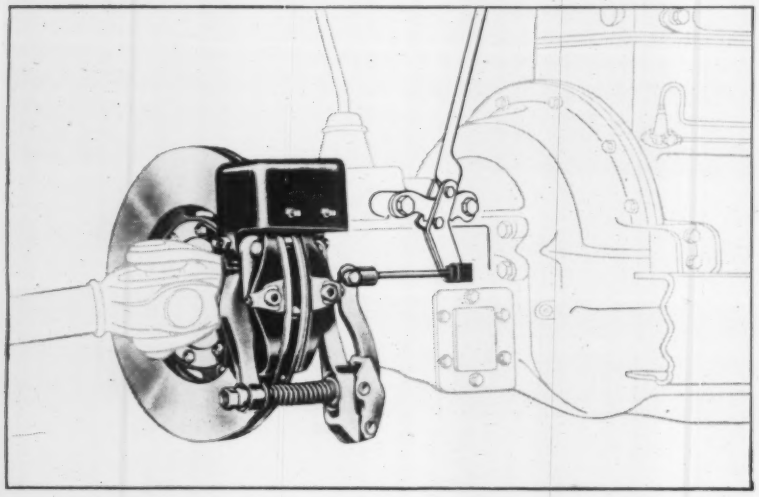
Their premise was based on the rash of underground construction evident throughout the world. Though design and construction of underground excavations for power plants, factories, warehousing, bomb-proof record storage and population shelters all fall within the jurisdiction of the civil engineer, it was pointed out that mining engineers should be consulted.

The educators suggested that no excavation should be located and designed before a thorough examination of the proposed site by both civil and mining engineers. The mining expert would study the composition of the rock and the history of the surrounding area to determine rock types and advise construction methods. He would interpret for the design engineer information gained from diamond drill cores from around the proposed excavation.

The mining engineer, pointed out Messrs. Corlett and Emery, knows the construction and support of underground excavations. ". . . He usually deals with forces greater than those employed by most engineers, and, if he has learned nothing else, he does know there is no such material as solid rock."

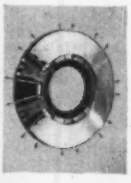
(*International continued on page 58*)

You Get Positive Protection Against Runaway or Parking Accidents When You Specify TRU-STOP Brakes



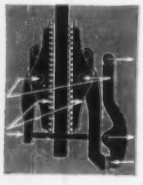
TRU-STOP brakes operate directly on the drive shaft. This means that they are not only excellent parking brakes, but dependable emergency service brakes as well. There's no dangerous self-energizing. TRU-STOP brakes have the surplus capacity for repeated use as an auxiliary to service brakes.

100% Ventilation Minimizes Fading



Brake efficiency depends on ability to dissipate heat rapidly and so prevent fading. TRU-STOP brakes are 100% ventilated. Discs are exposed to air even while braking. The TRU-STOP ventilation system circulates air *between* the disc plates.

Longer Life with Uniform Brake Pressure



The discs of TRU-STOP brakes are squeezed between the flat surfaces of the shoes. The brake lever operates both the front and rear lever arms simultaneously, and pressure is exerted on the center of each shoe. This puts the entire lining surface in contact, provides for even wear. TRU-STOP brake linings are *easy* to replace.

FOR POSITIVE PROTECTION...

Specify TRU-STOP BRAKES *on ANY Heavy Duty Equipment that Requires Braking*

***WRITE* for Catalogs DH-33 and DH-530**

Automotive and Aircraft Division
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. . . *International*

Canada's Railroads

Plans for Alberta Line to spur mining, lumber work

Expected soon to supplement Canada's roadbuilding plans is an agreement between the federal government and the Canadian National Railways to construct a 400 mile long railroad northward from McMurray in northern Alberta to Pine Point on Great Slave Lake in the District of MacKenzie. Cost is estimated from $60 to $70 million, between $15 and $20 million to be paid for by the government.

The line would be an extension of the Northern Alberta Railway operated jointly by the Canadian National and the Canadian Pacific railroads.

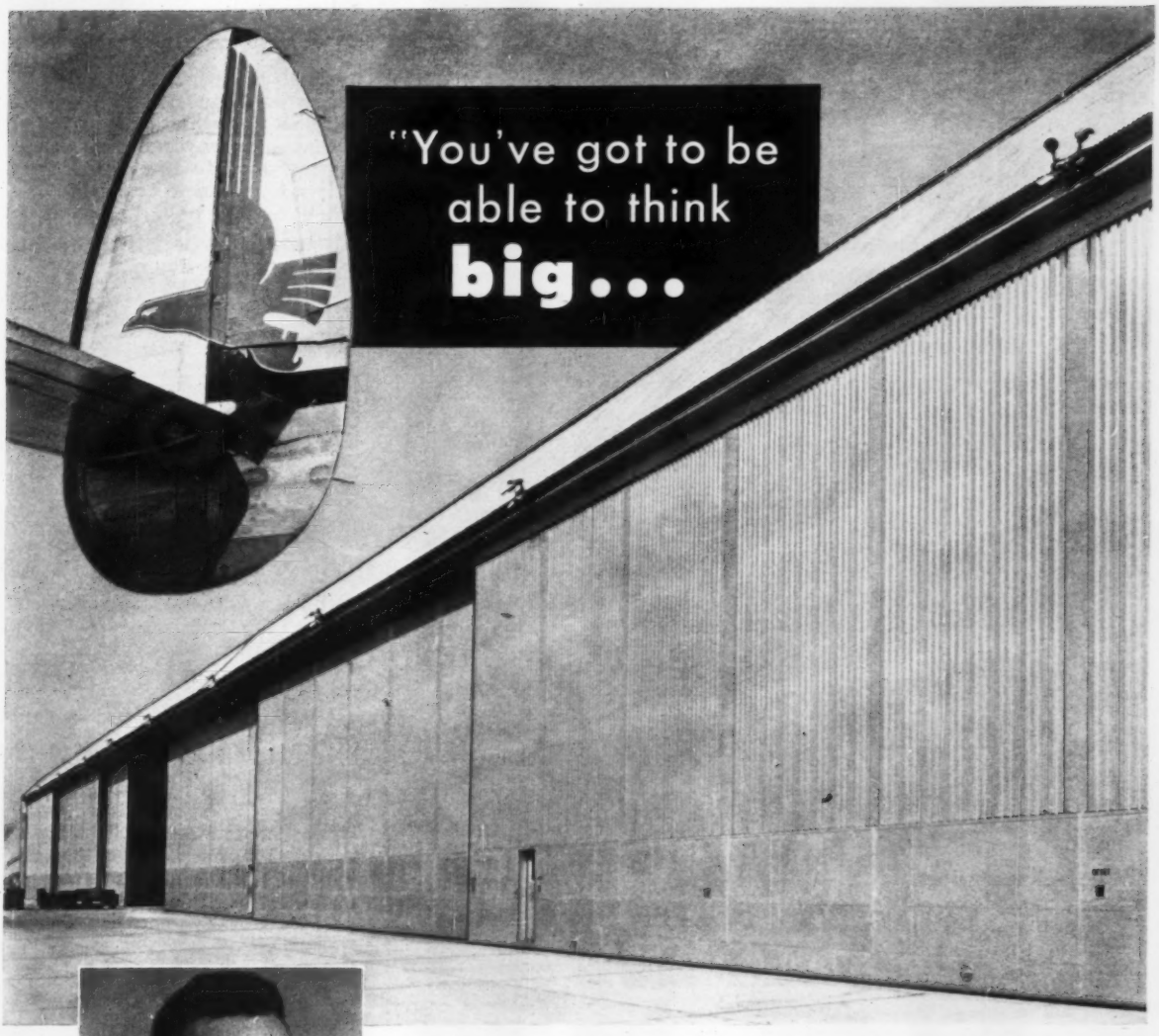
Recently residents of the Grimshaw-Peace River area appealed to the government to have the line start from the northwestern district, although informants said it is almost certain the rail branch, to tap northern mineral resources, will run from Waterways in northeastern Alberta, rather than from Grimshaw on the west side.

The railways concluded that while it would be physically possible to run the line from the Dawsons Creek-Grimshaw area, this would add considerably to the construction costs.

The proposed line is expected to open up northern Alberta and the southern edge of Northwest Territories by terminating at the site of extensive zinc and lead properties in the Great Slave Lake area.

According to latest reports, the new route would give access to 27 billion cu. ft. of saw log lumber, 300 million cords of pulp wood and some 3 million hp. of untapped hydroelectric power. Also within reach of the line would be the Alberta tar sands where Royalite Company plans to spend $50-million on a processing plant and pipeline.

The government is reported to be



MR. EUGENE NEDBOR, Vice President
Cauldwell-Wingate Co.,
General Contractors, New York City

to provide facilities for today's sky giants . . .
such as Hangar No. 9, for the New York
Port Authority at International Airport,
for **EASTERN AIR LINES!"**

"And we've found that International has the ability and experience to provide hangar doors engineered to specifications . . . designed for fast, easy operation under any climatic condition, and with lifetime weather-tightness. No wonder we've come to depend on International Service!"

AVIATION DIVISION

INTERNATIONAL STEEL COMPANY

1455 Edgar Street • Evansville 7, Indiana

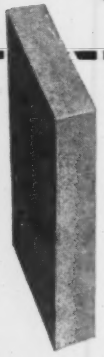
• Why not make use of International's experience in aviation hangars and doors for the project you may be planning?

INTERNATIONAL SERVICE

SERVICISED

SPECIAL PURPOSE PREMOLDED JOINT FILLERS

Here are three widely used special purpose joint fillers—each with specific advantages and characteristics which permit it to provide optimum performance and utility. Complete data and specifications on each type are available upon request.



Sponge Rubber CEMENTONE®

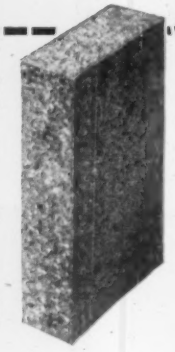
High quality blown sponge rubber, uniform in thickness and density. Neutral gray color blends well with concrete.

advantages

1. Blends with the color of concrete
2. Fully resilient
3. Non-extruding, with high recovery after compression.

recommended uses... For use in concrete structures where utmost resilience, non-extrusion and/or inconspicuous joints are desired. Ideal for use in tilt-up and bridge construction.

SELF-EXPANDING CORK



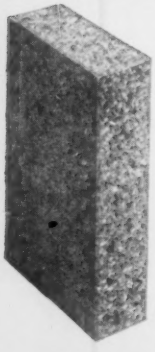
Similar in composition to Cork Joint, but is specially treated to enable it to expand as much as 50% beyond original thickness.

advantages

1. Fully compressible 2. Non-extruding
3. Will keep joint spaces filled under conditions which open joint to more than original size.

recommended uses...
For use in canal linings and structures, outlet works, spillways, stilling basins of dams, sewage disposal plants and water filtration plants.

CORK



Composed of granulated cork and synthetic resin binder molded under heat and pressure to form a flexible, waterproof filler.

advantages

1. Light in color 2. Compresses without extrusion
3. Recovers approximately 95% of original thickness after compression.

recommended uses... Extensively used in flood walls, outlet works and spillways, sewage and water treatment plants, bridge construction.

Want more details on Servicised Joint Fillers? Write for new manual—"The Design and Use of Joints in Concrete Structures."

SERVICISED PRODUCTS CORPORATION
6051 WEST 65th STREET • CHICAGO 38, ILLINOIS

prodding the railways to move more quickly on the project, because officials fear that otherwise construction will not get under way until next year. In any case the line is expected to take at least four years to complete.

Atomic Power Stations To Be Built by Russia

Russia has announced it will build three major nuclear power stations and four experimental installations. The larger plants will have a total capacity of 1.2 to 1.8 million kw.

The on-line stations will be in the range of 400,000 to 600,000 kw, say the Soviets. Their reactions will be of three different types: graphite-moderated with water and steam under pressure as the heat transfer agent; water as both neutron moderator and heat transfer agent; and heavy water as moderator and carbon dioxide as transfer agent.

The four experimental reactors will be built to test developments that appear promising but whose feasibility need further study.

Japan Seeks British Bids For Atomic Power Plant

Britain apparently has convinced Japan that its Calder Hall type of nuclear power plant is better than American entries. The Japanese have called for bids from three British concerns on a nuclear power station of about 150,000 kw capacity, which would cost about $55 million.

The power station is the first of five ordered by Japan from Britain. The United States also has orders for five plants. But the British orders amount to $224 million as compared to the U. S. total of $44.8 million.

In June Britain and Japan signed a 10 year agreement on peaceful uses of atomic energy. The agreement covers sale of nuclear fuels as well as reactors.

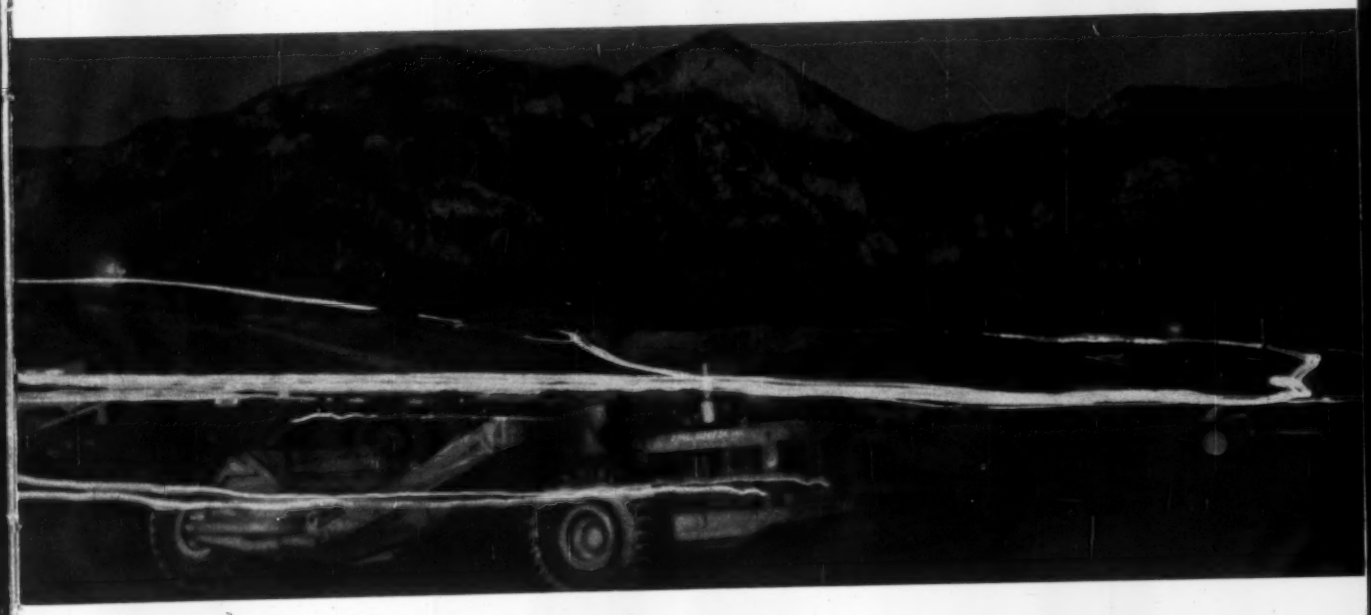
Americans Low Bid Suez Canal Dredging

Low bidder for the $20 million task of widening and dredging Egypt's Suez Canal is a joint venture of four American contractors.

The group consists of J. H. Pomeroy & Co. of San Francisco, Hawaiian Dredging Co. of Honolulu, and Standard Dredging Co. and the Atlantic, Gulf & Pacific Co. of New York City.

The job will entail the removal of about 40 million cu yd of material from the canal bottom. This project is part of the modernization program of the nationalized Suez Canal Authority.

Look ahead...*move ahead*...and stay ahead with Allis-Chalmers



. . . the construction machinery that keeps your production rolling

YEARS AHEAD IN DESIGN

extra performance

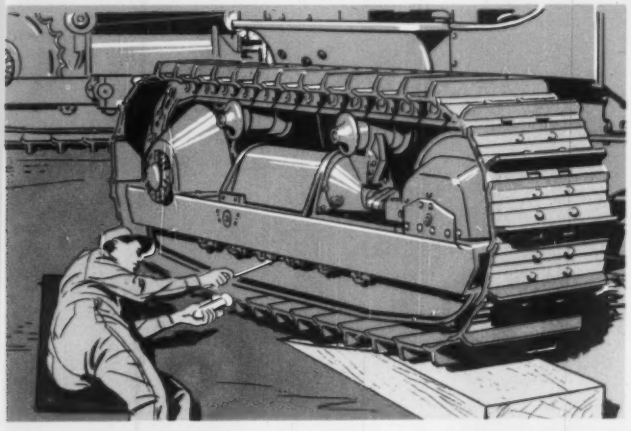
unequalled dependability

. . . backed by qualified dealer service

Your Allis-Chalmers Dealer is a Specialist in

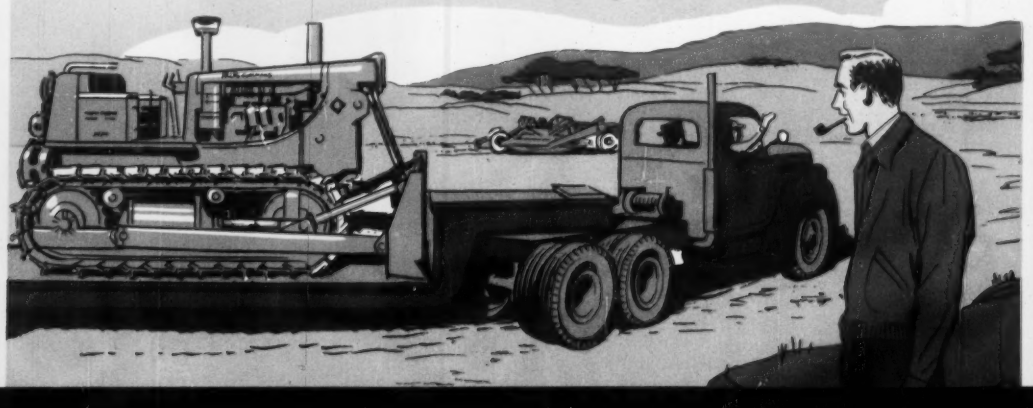
Your Allis-Chalmers dealer *knows* the equipment he sells. He can give you the expert service in shop and field that results in "like-new" performance from every Allis-Chalmers unit in your fleet . . . keeps them producing on your jobs.

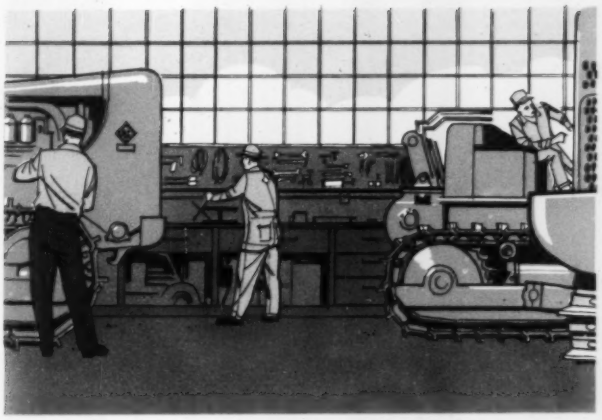
Add the availability of Allis-Chalmers parts—made in the same factory, to the same rigid specifications as original equipment—and you have a program built to maintain top performance, long equipment life, low job costs for *you!*



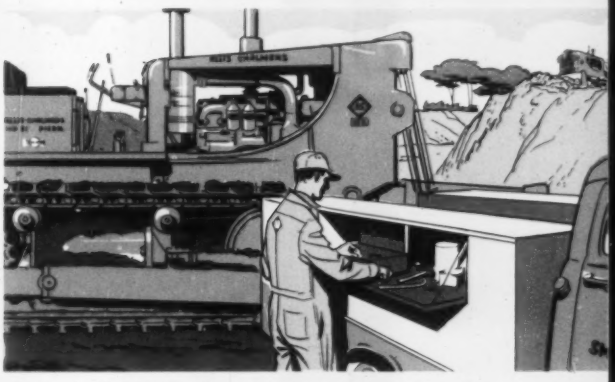
Careful pre-delivery servicing assures that Allis-Chalmers construction machines have been thoroughly rechecked . . . and that they're ready for work as soon as you get them.

Detailed information on maintenance, adjustments and other facts on care of the machinery is delivered with the equipment. Operating tips are passed along to your men—to help them get started right and get the most from their equipment.

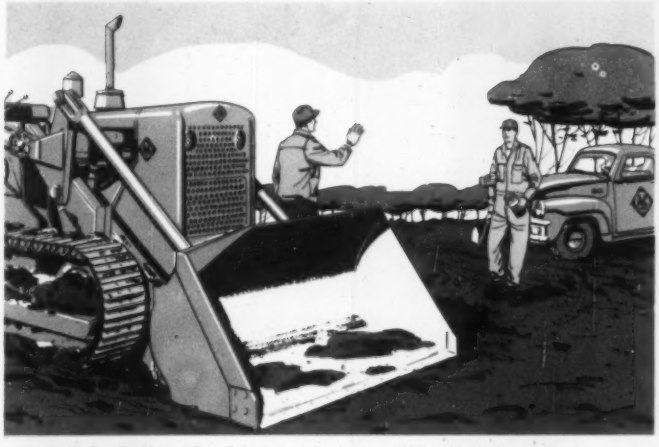




Shop service at your Allis-Chalmers dealer is fast and efficient—because it's handled by factory-trained men, using factory-approved tools, equipment and methods. Specialized mechanics and special facilities all help to speed service.



Prompt field service—A call—any time, day or night—brings a qualified serviceman and a fully equipped "mobile workshop." Result—problems can be quickly and accurately solved . . . equipment put back on the job with minimum delay.



Scheduling checkups with your Allis-Chalmers dealer will insure that proper maintenance procedures are followed . . . stop trouble before it starts . . . keep your machines producing.

. . . and there's more to this important story . . .

your Allis-Chalmers dealer
ALWAYS READY TO ROLL...

. . . with qualified service . . . original specification parts

ENGINEERED RIGHT

Allis-Chalmers parts are designed as original equipment . . . benefit from intensive metallurgical research. And each comes from the drawing boards of experienced construction machinery engineers.

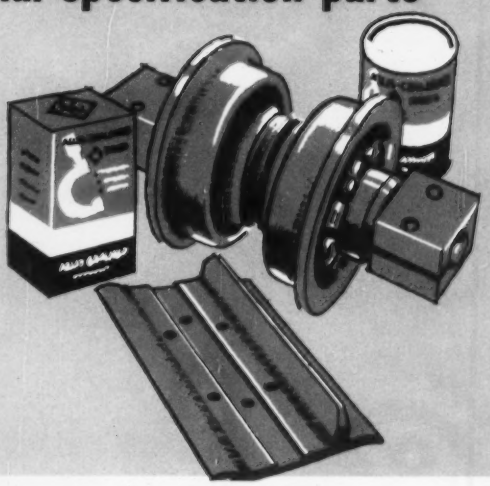
MANUFACTURED RIGHT

Precision-made parts assure long-life service. They're made by skilled craftsmen on modern industrial machinery and are subjected to original-equipment inspection and testing.

TO PERFORM RIGHT

Each part is made of top-quality material, heat-treated to correct hardness and made to exact specifications. You can depend on them for full-capacity production on the toughest jobs you have.

The men of your Allis-Chalmers dealer organization know local conditions. Look to them for equipment recommendations to fit your job requirements . . . for true value in used machinery.



Look ahead...*move ahead*...and stay ahead

ALLIS-CHALMERS, CONSTRUCTION MACHINERY DIVISION, MILWAUKEE 1, WISCONSIN

ALLIS-CHALMERS

FORM MS-1305

LITHO. IN U.S.A.

PIPE JOINT in middle of sling withstands lifting stresses. Made of special synthetic rubber base, the joint is extra watertight and resists corrosive industrial waste.

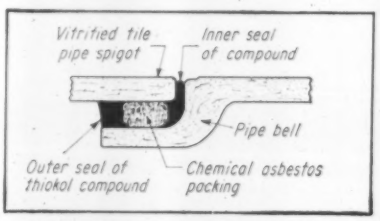
Flexible Joints Resist Acids

The American Cyanamid Co. used an unusual synthetic rubber to seal the joints of a sewer line carrying a variety of highly corrosive wastes at it's new plant near Pensacola, Fla.

There are a number of different conditions the line has to overcome. Because the line is in fill, its joints have to be flexible. As there is danger of leaks contaminating the plant's deep well water supply, the joint material has to be near leakproof and resistant to acids.

Vitrified clay bell-and-spigot pipe was chosen. The joint compound used is based on Thiokol, which itself is the base of rocket fuels, and is produced by the David E. Long Co., New York City. Thiokol has seen use as a sealing material for curtain wall structures.

The compound was applied by caulking gun to the inside rim of the bell. The next pipe section was fitted and an asbestos filler tamped between the walls of the joint. The compound then was caulked into the outside portion of the joint unfilled.



COMPOUND IS PLACED on both sides of asbestos filler tamped into joint.

The bond and flexibility of the joint allowed the contractor, J. A. Jones Construction Co., to join two sections at ground level and then insfall them as a unit without disrupting the seal. More than 1,200 ft of pipe was installed with this method of jointing.

(*Field & Office continued on page 66*)

HOW TO RUB or GRIND CONCRETE

Today, more and more builders specify a fine finish for concrete walls and ceilings. Because of this new requirement, and of the time and expense involved for hand finishing large areas, Stow Manufacturing Company has developed two, easily portable flexible shaft grinders for finishing concrete. These grinders are electrically powered.

Two methods are used to smooth off hardened concrete: wet rubbing and dry grinding. Wet rubbing—required for smoothing green concrete to a plaster-like finish. Use slow speed grinding wheel or disc. Apply water while grinding. Wet concrete can also be painted on with a brush, then smoothed into holes with the grinding wheel. Dry Grinding—use a high speed grinding wheel or abrasive disc to smooth dry concrete.

Either of Stow's portable electric grinders, the ½ HP model G40-C or the ¾ HP model JT-50, can be used for wet or dry grinding. Both models are available with open or totally enclosed motors, and are equipped with 8 or 12-ft. flexible shafts. Angle heads with different speed ratios can be selected. Write for STOW's pamphlet, Grinding Concrete for complete information on proper speeds, grinding discs and wheels for both wet and dry concrete finishing. Stow Manufacturing Co., Binghamton, N. Y. also makes a complete line of concrete vibrators, rotary trowels, and screeds.

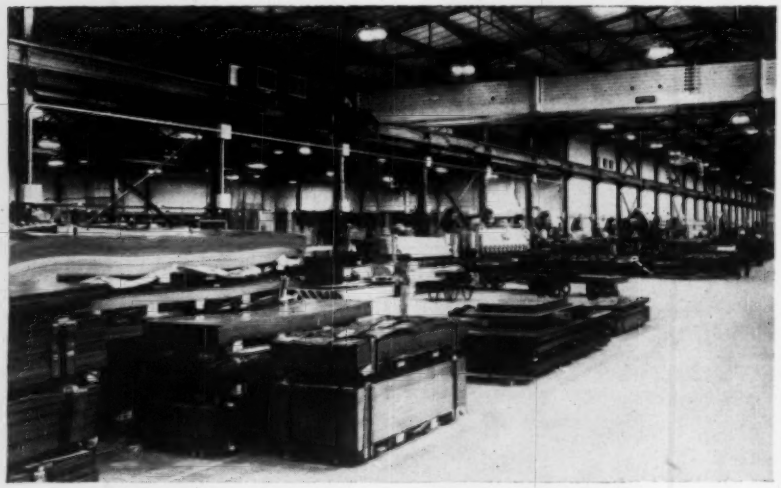
STOW MANUFACTURING CO.
19 Shear St., Binghamton, N. Y.

Please send me your pamphlet, GRINDING CONCRETE.

Name..... Title.....

Company.....

City..... Zone... State.....



In a dehumidified metalworking plant . . .

Air Conditioning Cuts Rust

A metalworking firm in Oaks, Pa., is using the air-conditioning system of its new plant to pare the cost of storing steel. With a dehumidified area available for storage, the company, Penco Metal Products Division of Alan Wood Steel Co., no longer has to paint stock parts to prevent rust.

Penco makes lockers, cabinets, shelving and other sheet steel items. The procedure followed for much of the company's output is to maintain stocks of standard components and to paint and assemble the various finished items as orders come in.

Before moving into the new plant, the firm had to paint the steel parts with a preservative coat immediately after forming them. Without that hindrance, a rust film would form on the metal within 24 hours. Now, with relative humidity controlled to 35% in the 18,000 sq ft storage area, parts are stored unpainted, and the preservative coat is eliminated altogether.

The principal element of the air-conditioning system is a 600 ton hermetically sealed centrifugal refrigeration unit. It supplies chilled water to fan-coil units throughout the office and plant areas.

The plant was designed and built by Robert E. Lamb, Inc., industrial engineers and builders, Philadelphia. The Trane Co., La Crosse, Wis., supplied the heating and cooling equipment.

Pipe Gets Heaviest Wire Reinforcement

A $10.3 million concrete sewage interceptor line now under construction in Louisville is reinforced with what is believed to be the heaviest gauge welded wire fabric ever used. The 8 ft dia pipe with 9 in. walls extends more than 2 miles between a new treatment plant southwest of the city and an existing collection system.

The reinforcement consists of 0.505 in. dia wires at 2 in. centers circling the pipe with 4 ga wires at 8 in. centers spacing the heavy wires. The heaviest wire used until now is believed to be 0.490 in. dia.

Two concentric cages of the fabric are used in each 8 ft long section of the concrete pipe, the heavy reinforcement being required to withstand the load from up to 47 ft of backfill.

In addition to the fabric reinforcement, ½ in. round stirrups are used at top and bottom for shear resistance. These are spaced 4¼ in. circumferentially, and 6 in. lengthwise, with a total of 12 around each band.

Kentucky Concrete Pipe Co. is manufacturing an average of three 8 ft sections a day in its Louisville plant. Stirrups are welded to maintain 6 in. spacing between the inner and outer cages. The pipe, made up of 5,500 psi concrete, is steam cured at 130 deg for a period of 24 hours. Three-edge bearing test results showed hairline cracks at 70,000 lb load and .01 in. cracks at 195,000 lb.

Contractor is Rocco Ferrera of Detroit. Consulting engineer on the sewerage project is Metcalf & Eddy, Boston.

To Best Meet Fencing Needs

PAGE CHAIN LINK FENCE

offers the Widest Choice

You can choose from

—8 Fence Styles
—8 Fence Heights
—4 Fabric Metals
—2 Types Metal Posts
—Top Rail or Top Wire
—Single or Double Extension Arms
—6 Gate Styles, Many Widths

• PAGE provides a wider choice of long lasting fence fabric metals. Each has characteristics which meet individual preferences or make it more suitable to meet certain climatic or service conditions.

Galvanized Steel • Woven of time-proved open-hearth steel wire, hot-dipped galvanized after weaving to assure long service.

Aluminized Steel • By a PAGE patented process a coating of commercially pure aluminum is bonded to steel wire to provide longer corrosion resistance, yet its cost is comparable with fence fabric having shorter life expectancy.

Aluminum • Another metal in non-corrosive class. It will not rust, will not discolor materially under unfavorable conditions. Semi-flat weaving gives it exceptional strength.

Stainless Steel • This chrome-nickel fabric is immune to practically all corrosive elements. Advantageous near salt water and where air is laden with smoke, sulphur and other factory emissions.

Nation-wide Erecting Service • In more than 100 districts there are local, responsible members of Page Fence Association—the largest fence engineering, erecting and servicing organization. These experts own their own plants and equipment, carry complete stocks of PAGE FENCE materials, and operate crews of trained workmen. Each firm is permanently located and has lasting interest in every job it handles.

Write for file-size folder containing full information and name of member nearest you. Address—

PAGE FENCE ASSOCIATION
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A PRODUCT OF PAGE STEEL & WIRE DIVISION AMERICAN CHAIN & CABLE COMPANY, INC.

NEW Wedge-Lock* JOINTS

Greatest Contribution to Sanitary Engineering since Vitrified Clay Pipe

LIKE A RAILROAD COUPLING... WEDGE-LOCK JOINTS WEDGE IN! LOCK TIGHT! IN ONE SIMPLE, EASY OPERATION

When you want to set high performance standards . . . control infiltration to strict specifications and reducing pumping costs . . . handle root problems . . . insure completion of the job exactly as originally designed . . . maintain lower cost-in-place due to faster, easier installation . . . you'll call for the *best* factory-made joint. Bonded-on Wedge-Lock Joints go in as fast as the trench is dug . . . "snap" tight instantly, in continuous compression . . . last as long as the world's longest lasting pipe.

Always specify *Vitrified Clay Pipe*, with *Wedge-Lock Factory-Made Joints*. Write to listed manufacturers for literature or an actual Wedge-Lock demonstration.

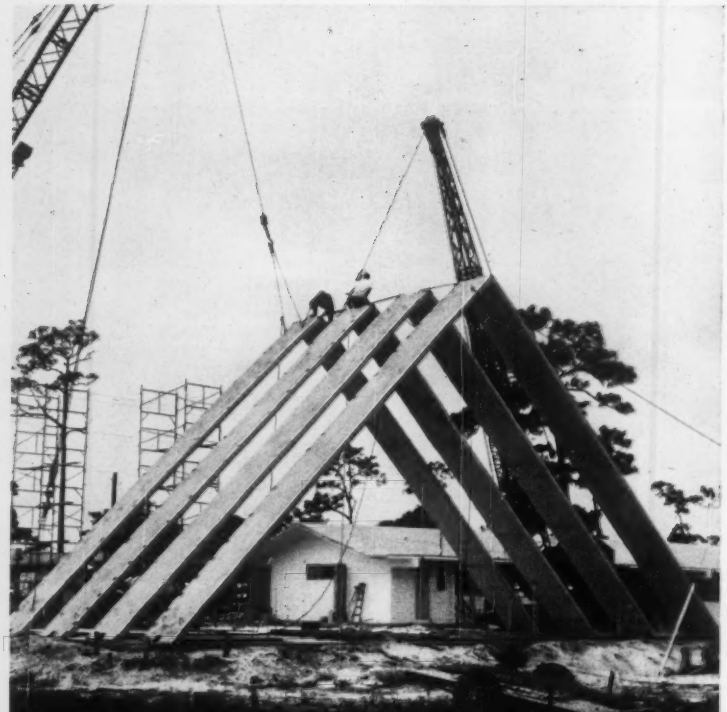
*Patented . . . T.M. Reg. U.S. Pat. Off.

Wedge-Lock CLAY PIPE

THE FACTORY-JOINTED CLAY PIPE AVAILABLE NATIONALLY FROM LOCAL MANUFACTURERS

Order Wedge-Lock from any of these Vitrified Clay Pipe Manufacturers:

Cannelton Sewer Pipe Company, Cannelton, Ind.
The Evans Pipe Company, Uhrichsville, O.
The Logan Clay Products Company, Logan, Ohio
Pacific Clay Products, Los Angeles 54, Calif.
Pomona Terra-Cotta Company, Greensboro, N.C.
Graff-Kittanning Clay Products Company, Worthington, Pa.
Clay City Pipe Company, Uhrichsville, Ohio
Gladding, McBean & Company, Los Angeles 54, Calif. *(Sold under trade name, "SPEED-SEAL")*
Oconee Clay Products Company, Milledgeville, Ga.
Pine Hall Brick & Pipe Company, Winston-Salem, N.C.
The Robinson Clay Product Company, Akron 9, Ohio
Superior Clay Corporation, Uhrichsville, Ohio
The Stillwater Clay Products Company, Cleveland 16, Ohio



Working together, two cranes position prestressed slabs. 20 slabs are 5½" thick, 4' wide and 38½' long; 8 slabs are 4" x 4' x 38½'; there are 10 shorter slabs 4" x 4' x 30'.

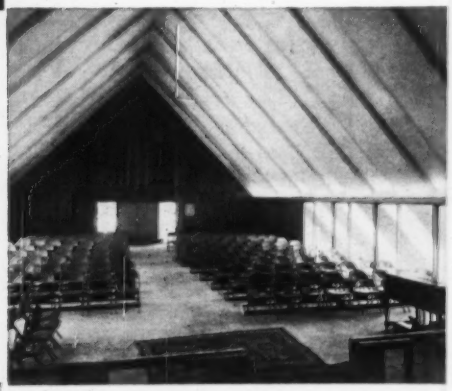
NEW CHURCH DESIGN SHOWS VERSATILITY OF **PRECAST, PRESTRESSED CONCRETE**

• The St. Ambrose Episcopal Church in West Fort Lauderdale, Fla. is another example of the almost unlimited possibilities of modern precast, prestressed concrete construction.

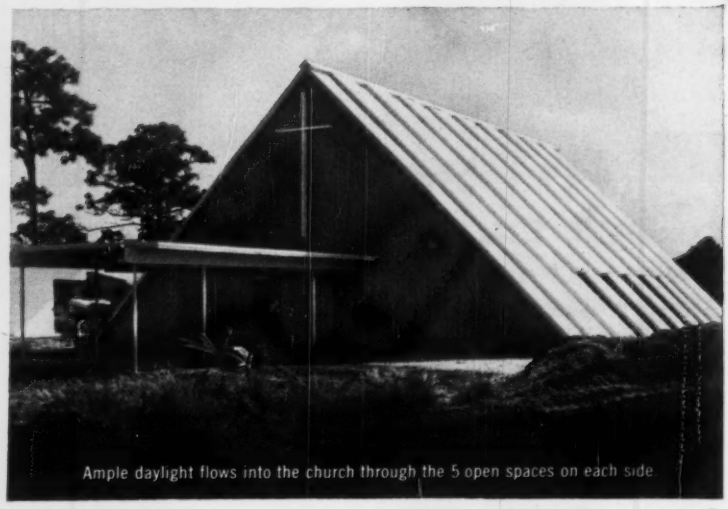
Just 38 prestressed slabs were required for this unique structure. Cast with plates imbedded at the ends and along the sides, slabs were fitted into slots in the footings, hoisted into place and welded together. The joints were coated with roofing material. That's all there was to it.

By eliminating conventional walls and roof, this technique resulted in substantial savings to the owner. The appearance of the completed job speaks for itself.

The prestressed slabs were made with Lehigh Early Strength Cement at the R. H. Wright & Son, Deerfield plant. Its use helps them save time and money in producing a variety of top quality concrete units.



On the interior, prestressed slabs were sprayed with an acoustical plaster.



Ample daylight flows into the church through the 5 open spaces on each side.

ARCHITECT: Johnson and McAlpine, Ft. Lauderdale, Fla.
CONTRACTOR: Quick Quality Construction, Inc., Ft. Lauderdale, Fla.
PRECAST, PRESTRESSED CONCRETE UNITS MANUFACTURED BY: R. H. Wright & Son, Ft. Lauderdale, Fla.

- LEHIGH EARLY STRENGTH CEMENT
- LEHIGH PORTLAND CEMENT
- LEHIGH AIR-ENTRAINING CEMENT
- LEHIGH MORTAR CEMENT

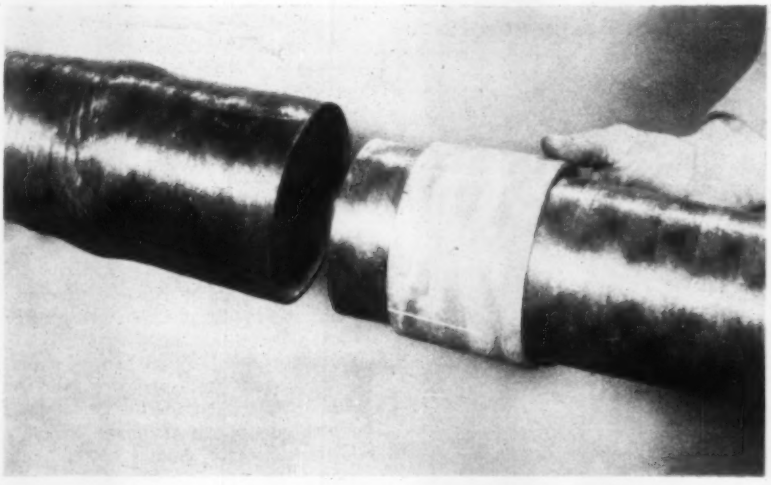
LEHIGH PORTLAND CEMENT COMPANY
Allentown, Pa.

DOUBLE-TANDEM four-wheel-drive carrier uses high-strength steel, as does . . .

Another Six-Wheel-Drive for FWD

Double-tandem 8x4 and 8x6 rubber-tired crane carriers are being put out by the Four Wheel Drive Auto Co. The 8x6 has both a driving rear tandem and a driving axle on the front tandem, providing six-wheel-drive. The 8x4 is equipped with driving power to the rear tandem for four-wheel-drive.

Designed to transport 25 to 45 ton cranes, the new series comes with either gasoline or diesel engines. FOUR WHEEL DRIVE AUTO CO., CLINTONVILLE, WIS.



Strong Plastic Pipe Resists Corrosion

Corrosion-resistant reinforced plastic pipe now is being manufactured in 2 to 12 in. diameters for high pressure applications involving sewage and industrial wastes and gases, fresh and salt water, petrochemical products, structural tubing and conduit.

Known as Bondstrand, the new pipe is made of interwoven fiber glass filaments impregnated with epoxy resins and heat cured. The pipe comes in rigid 20 ft lengths with ends plain, bell-and-spigot or flanged. Other lengths, as well as diameters up to 40 in., are available on special order.

The pipe is non-toxic, non-flammable and does not cold flow or sag in use. Two standard series are in production, one with a nominal working pressure of 250 psi (Bondstrand 250) and another rated at 500 psi (Bondstrand 500). Both have a safety factor of 10. Greater pressure ratings may be attained on special order since the manufacturing process permits beefing up wall thickness as required.

The pipe is easily cut and joined in the field and requires no special tools. The basic joint is made simply by placing the spigot end of one pipe into the bell end of the next. An O-ring and a tapered sleeve, both secured with a special adhesive, seal the joint permanently against leakage.

The pipe weighs one-eighth of its stainless steel counterpart, with which it is competitive in cost. Bondstrand costs substantially more than ordinary galvanized or wrought iron pipe. AMERCOAT CORP., 4809 FIRESTONE BLVD., SOUTH GATE, CALIF.

New Mobile Pump Empties Coolant, Grit and Sludge

A coolant service pump now is available to empty coolant tanks, transfer clean coolant to reservoirs, flush pressure lines, and for use as a standby pumping unit.

The mobile pump delivers 900 gph with a 25 ft suction lift, according to the manufacturer. It operates on 110 v, utilizing a ¼ hp electric motor and a positive pressure pumping principle. ASSOCIATED ENGINEERS, INC., BOX 1628, SPRINGFIELD, MASS.

Blower Valve in Throttle Of Lightweight Rock Drill

A lightweight rock drill, the J-30A Jackhamer, is recommended by the manufacturer for jobs where a powerful but easy-to-handle drill is needed.

Hole cleaning with the new drill is quickly and conveniently done. A blower valve is incorporated in the throttle valve. And turning the throttle to its rearmost position directs cleaning air under full line pressure through the drill rod and bit.

The J-30A is said to be easily converted to the plain dry or wet styles. INGERSOLL-RAND, 11 BROADWAY, NEW YORK 4, N. Y.

(*New Products continued on page 70*)

Fingertip Controls for the D8

Hydraulic power steering can be field installed on most Caterpillar D8 tractors, according to Rivinius, Inc., manufacturer of "Live Power Steering." With the new fingertip controls, it is claimed that the tractor can be turned at as much as two speeds faster.

The system consists of a double hydraulic cylinder connecting to both steering clutch adjusting rods, a heavy-duty control valve, Vickers hydraulic pump, reservoir, hoses and hardware. The system is cited as being low in cost. RIVINIUS, INC., EUREKA, ILL.

Earthmover Can Hit 50 MPH on Highways

A carrier-mounted ⅜ yd Hopto is said to be capable of highway speeds of up to 50 mph. The Model 200 has a full range of attachments including backhoe and shovel buckets.

The hydraulic earthmoving machine has a 13½ ft digging depth, a 200 deg uninterrupted swing, 180 deg wrist-action digging and individually controlled hydraulic outriggers.

The machine features a hydraulic system delivering 72 gal of oil per minute and is mounted on a motorized carrier with a 124 in. wheelbase. With boom lowered, it can move under overhead obstacles of 8 ft 6 in. clearance. WARNER & SWASEY CO., 5701 CARNEGIE AVE., CLEVELAND, OHIO.

Manufacturer Offers Line Of Tractors and Loaders

Tractors and loaders with a variety of attachments are a new line of the Industrial Division of Massey-Harris-Ferguson, Inc.

The Work Bull 202, an industrial utility tractor with a high-torque, 40 hp engine, develops strong lugging ability at low speeds, according to the manufacturer. The Davis loader is designed to attach directly to the unit, and the pump drive and mounting are built into the tractor.

The Work Bull 1001 multipurpose tractor loader is convertible into eight types of machines — a pickup street sweeper, backhoe, fork lift, angle dozer, crane, rotary broom, and loader with scarifier attachment. It features no shift, instant reversing, 43 deg bucket roll back at ground level, direct line thrust, power steering, torque converter, a load shock absorber for the life arms.

The 52 hp Work Bull 303 has instant reversing and power steering. It accommodates the 500 loader, which has a variety of attachments. Both come in gasoline or diesel models.

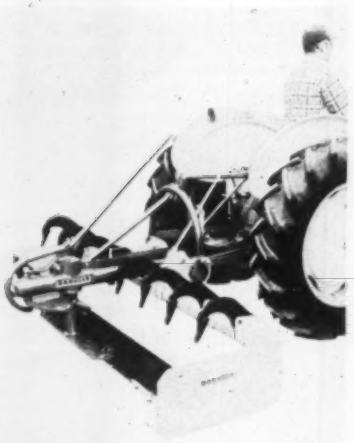
The Work Bull fork lift has 10 quick-change attachments to help in stock-piling and cleanup work and can operate under an 8 ft 2 in. clearance. MASSEY-HARRIS-FERGUSON, INC., MASSEY-FERGUSON INDUSTRIAL DIV., 1009 S. WEST ST., WICHITA, KAN.

Welding Electrodes Offered By Maker of Steel Plate

Lukens Steel Co. has introduced a complete range of welding electrodes specifically matched to its own range of alloy, alloy-clad, and carbon steel plates. The company believes the availability of plate and weld material from one source to be a significant development in steel plating merchandising.

Big advantage seen is better quality control in the fabricated steel plate product by continuous control over the chemistry of rods and the plate.

The manufacturer has spent some two years in developing this product called Plate Mate, which is sold direct and not through distributors. More than 40 types of electrodes are available in 5 lb to 750 lb packs. LUKENS STEEL CO., COATESVILLE, PA.



Multi-Purpose Attachment Is Easily Bolted to Blade

A scarifier-scraper blade attachment now on the market is said to be easily bolted to a 6 to 8 ft Danuser blade to rip, scarify, scrape, grade, level, backfill and terrace any kind of soil—even clay, packed topsoil and hard pan.

One man can operate the hydraulic control to raise, lower or hold the scarifier-scraper at the desired working position. A spring-loaded control handle, accessible at the tractor seat, lifts scarifier teeth when not in use.

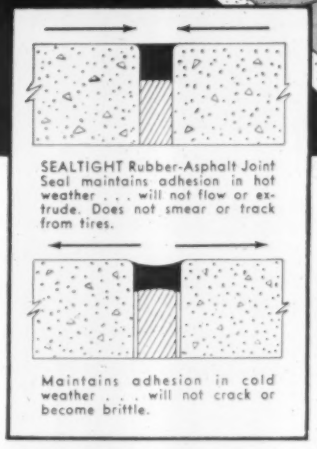
The attachment was designed to increase the utility of the all-purpose blade and to eliminate the cost of a one-purpose tool. Alloy steel construction aims toward durability and long, hard use with minimum maintenance. Danuser Machine Co., Fulton, Mo.

Added Stability Given By Short Stroke Hoists

A new line of twin cylinder underbody telescopic hoists has been introduced. With capacities of 6½ to 8 tons, the new underbody telescopic hoists feature short stroke design, with only one moving sleeve section.

Designated the TA and TR series, the hoists are designed to provide extra stability, even when dumping on rough

JOINTS MAINTAIN THEIR SEAL UNDER ALL WEATHER CONDITIONS WITH...


SEALTIGHT Rubber-Asphalt Joint Seal maintains adhesion in hot weather . . . will not flow or extrude. Does not smear or track from tires.
Maintains adhesion in cold weather . . . will not crack or become brittle.

SEALTIGHT rubberized-asphalt compounds provide the ideal sealer for years of economical, trouble-free joints in concrete construction. They feature high resilient and adhesive properties and are able to maintain a bond at below zero temperatures. Will provide a positive seal in all types of monolithic construction. Designed for use with non-extruding type fibre expansion joints.

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PRODUCTS

- EXPANSION JOINTS . . . Asphalt, Fibre, Cork and Sponge Rubber.
- TONGUE and GROOVE Center Strip.
- Hot and Cold Rubber Asphalt Joint Seal.
- Hot and Cold JFR Rubber Asphalt Joint Seal.
- Air Entraining Agents.
- Curing Compounds.
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- "PREMOULDED MEMBRANE" Vapor Seal.
- "DURAJOINT" PVC Waterstops.
- "HYDROMAT" Asphalt Liners.

SEALTIGHT®

RUBBER-ASPHALT JOINT SEAL

RUBBER-ASPHALT JOINT SEAL compound available in both hot-pour and cold-applied types. SEALTIGHT Hot-Pour Rubber-Asphalt meets Federal Specifications SS-S-164 and CAA Specification P-605 . . . SEALTIGHT Cold-Applied Rubber-Asphalt meets Federal Specification SS-S-159 and CAA Specification P-615. Both are ideal for use in the joints of concrete streets, highways, bridges, etc.

JFR RUBBER-ASPHALT JOINT SEAL is recommended for sealing concrete runways where resistance to jet fuel is necessary. Available in Hot-Pour Type to meet Federal Specification SS-S-00167 and Cold-Applied Type that meets Federal Specification SS-S-00170. Easy and economical to apply.

TONGUE AND GROOVE Joint, used primarily as a longitudinal joint, provides a "keyed joint" that assures maximum efficiency in load transmission . . . helps to prevent blow-ups, spalling and controls cracking. Completely waterproof . . . produced from asphalt hardboard . . . is rigid, easy to handle and install, will not extrude. More economical and safer than steel center strips and will not rust away. Approved by Federal, State and Local engineering authorities.

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Write today for complete information on the above products plus information about the many other top-quality SEALTIGHT products for highway construction . . . ask for the "PAVING PRODUCTS" Catalog.

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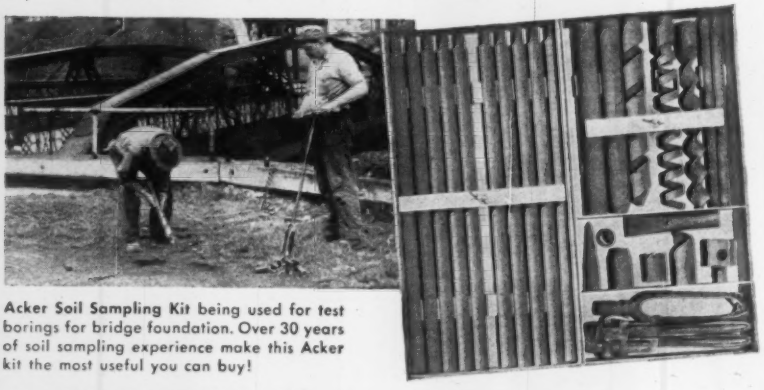
use an ACKER SOIL SAMPLING KIT for accurate sub-surface information

With accurate sub-soil information, *you avoid* costly trouble later on. And, what better way to get this information than with a portable, easy to use Acker Soil Sampling Kit. For here is a versatile collection of twelve soil sampling tools packed in a handy steel kit that can be carried in any car.

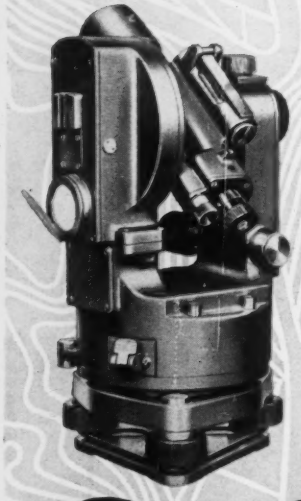
Write today for prices and Bulletin 26ENR.



Acker Soil Sampling Kit being used for test borings for bridge foundation. Over 30 years of soil sampling experience make this Acker kit the most useful you can buy!

ACKER DRILL CO., Inc. 725 W. Lackawanna Avenue Scranton, Penna.

a complete line of Diamond and Shot Core Drills, Drilling Accessories and Equipment



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with Self-Indexing Unit

A time saving automatic feature ensures sufficient verticality of the main axis and accurate indexing of the vertical circle by simply centering a bull's eye level.

- **Both circles viewed simultaneously**
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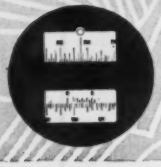

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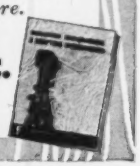


F/S DISTRIBUTORS: The A. Lietz Co., San Francisco and Los Angeles, Calif.—National Blue Print Co., Chicago, Ill.—Watts Instruments, Columbus, Ohio—Geo. F. Muth Co., Inc., Wash., D. C.—CANADA: Instruments 1951 Ltd., Ottawa, Toronto, Regina, Montreal.

ground. The makers also claim the lightweight design results in greater payloads and lower gasoline consumption.

Other features include a full circulating hydraulic system that prevents excessive oil pressure without the use of a relief valve. GAR-WOOD INDUSTRIES, INC., WAYNE, MICH.

. . . New Products Briefs

• **Non-slip surfacing**—Two new non-slip coatings are unique in that both the particle and carrier in each remain permanently resilient. Cideo Non-Slip and Cideo Non-Slip Pulley Lagging are paintable and can be used on either rigid or flexible surfaces. The safety surface material not only has high slip resistance, but cuts noise and acts as a cushion. CALIFORNIA INDUSTRIAL DEVELOPMENT CO., LIVERMORE, CALIF.

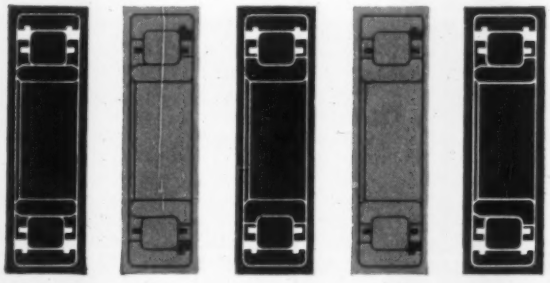
• **Auger head**—A new PENGO heavy-duty offset boring head, designed for welding to any heavy-duty cast steel auger, has been put on the market. It includes such features as an added helix for more dirt carrying capacity and a valve to prevent loss of dirt in the hole being dug. PETERSEN ENGINEERING CO., INC., SANTA CLARA, CALIF.

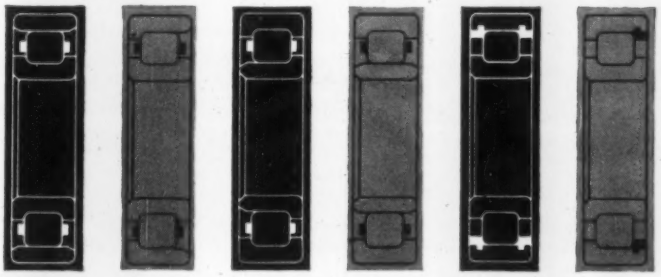
• **Framing anchor**—A symmetrical anchor for use on either right or left connections between structural wood members is part of a new "Strong Tie" line of anchors hangers and construction accessories. This single anchor offers six combinations for all two and three way ties, reducing inventory of connectors for builders. SIMPSON CO., 1060 E. 11 ST., OAKLAND 6, CALIF.

• **Sealing tape**—A glass-metal tape sealer for any combination seal between the two has been developed under the name "#1072 Butene Sealing Tape" for use in construction of curtain wall exteriors. The rubbery vulcanized tape is easily applied direct from the packaged roll. Tests indicate the sticky material will retain its elastic and adhesive qualities over a long period. SUYDAM DIV., PITTSBURGH PLATE GLASS CO., ISLAND AND PREBLE AVES., PITTSBURGH 33, PA.

• **Narrow head vibrator**—A $\frac{7}{8}$ in. dia concrete vibrator head now is available for use in tight precast and beam fireproofing work. The head is connected by a $\frac{7}{8}$ in. shaft to a standard Stow CU $\frac{1}{2}$ hp Midget Vibrator. The 880 model is 10 in. long and operates at 12,000 vibrations per minute. STOW MANUFACTURING CO., 443 STATE ST., BINGHAMTON, N. Y.

The Type UR-E Tru-Rol segmented-retainer bearing illustrated above, affords adequate precision, performance and life expectancy for most "upper range" commercial-grade applications.





Rollway Tru-Rol Bearings give you "for the job" selectivity in a wide range of applications. They approach the design, precision and quality of bronze-retainer bearings as closely as commercial grade pricing will allow. Internal clearances are close. Rollers are equally spaced to avoid out-of-balance vibration and "pulse". And each is crowned to distribute the load evenly along the full length of the roller. 11 types available in single and double width bearings, in stamped steel retainer, segmented retainer or full roller construction.

ask a near-by Rollway Service Engineer to detail the quality you should be getting in your "commercial grade" bearings. No cost. No obligation. Write to

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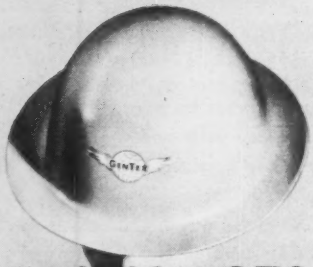

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Men and Jobs

Ferguson Promotes Clark To Vice President Post

Norvon Clark, who has been Eastern district manager for H. K. Ferguson Co., Cleveland, has been appointed vice president of the firm. In his new post he will be responsible for new-business activities. As Eastern manager of the company, he supervised projects for rayon, food, chemical and heavy machinery industries.

Mr. Clark was involved with Ferguson work in design, construction and operation of the thermal diffusion plant at Oak Ridge Atomic Plant during World War II. And he was assistant to the project director when the company designed and built the atomic pile at Brookhaven National Laboratory in Upton, N. Y., in 1947.

A graduate of the University of Chattanooga, Mr. Clark took graduate courses in industrial engineering at Georgia Institute of Technology.

Pereira & Luckman Names Otto Kilian Vice President

Otto H. Kilian has been promoted to vice president of Pereira & Luckman, planning-architectural-engineering firm with offices in New York City and Los Angeles.

Mr. Kilian formerly was a project manager with the firm and specialized in educational facilities, hotels, department stores and shopping centers. He was in charge of planning facilities designed for the University of California's Santa Barbara campus, and the Hilton Hotel now being built in Berlin.

He graduated from the University of Southern California in 1951.

Pennsylvania Names Lyon Top Sanitary Engineer

Walter A. Lyon has been appointed director of the Division of Sanitary Engineering of the Pennsylvania State Health Department. Since joining the department in August, 1957, he's been acting director because of the illness of the late Howard E. Moses, who was director.

Mr. Lyon is a civil engineering graduate of Johns Hopkins University, and also received a masters degree in sanitary engineering from the University, in 1948. After graduation he spent several years with the Maryland State Health Department. In 1950 he became assistant chief of the planning and development branch for the U. S. Public Health Service. In 1954 he joined the Philadelphia Department of Health as assistant chief of environmental health.

Careers

Business

Daniel B. Ventres, recently retired from the Bureau of Reclamation after more than 31 years of federal service, has become consultant and Washington representative for Vogt, Ivers, Seaman & Associates, Cincinnati consulting engineers.

Thomas M. Lowe, Jr., & Associates, Inc., has opened its firm in Atlanta, specializing in civil engineering and photogrammetry.

Public Works

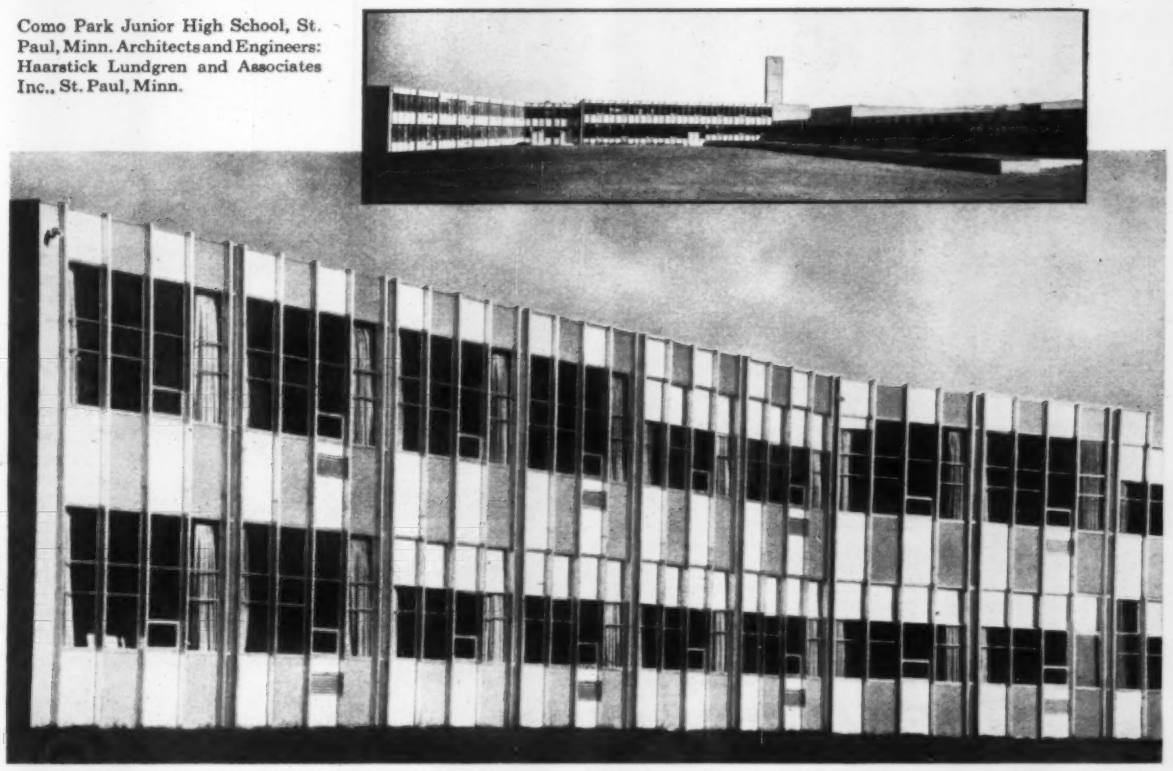
Maurice LeBosquet, formerly assistant chief of the U. S. Public Health Service's water supply and water pollution control program, has been assigned to the International Cooperation Administration as chief sanitary engineer of the Technical Cooperation Mission to India, one of the largest of the Point IV missions.

Henry M. DeNoble, formerly traffic engineer and director of planning at Springfield, Mo., has become traffic engineer at Little Rock, Ark.

Awards

Michael Baker, Jr., founder and president of Michael Baker, Jr., Inc., engineering firm with headquarters in Rochester, Pa., has been named to receive one of Pennsylvania State University's Distinguished Alumnus Awards. He graduated in 1936 with a degree in civil engineering.

Como Park Junior High School, St. Paul, Minn. Architects and Engineers: Haarstick Lundgren and Associates Inc., St. Paul, Minn.



NOW! Johns-Manville TRANSITOP® building panels are PRE-PRIMED to take any type of paint finish

. . . provide unlimited color possibilities in economical curtain-wall construction

PRE-PRIMED Transitop panels give architects and builders new freedom in the use of color as an expression of decoration in both exterior curtain wall and interior construction.

The factory pre-primed coat, on both faces of Transitop panels, eliminates priming on the job, acts as a first face coat. J-M Transitop will accept any good grade of paint of any type or color. Labor and painting costs at the job site are reduced. A decorative color job is completed faster.

A variety of decorative effects are possible by combining painted Transitop panels with various shapes, sizes and finishes of spandrel- and mullion-type construction.

Johns-Manville Transitop is an insulating structural panel, consisting of an impregnated core faced on two sides with incombustible Asbestos Flexboard® sheets. The core of the impregnated insulating board cuts heat loss in winter, keeps the building cooler in summer.

Panels 4′ wide by 8′ up to 12′ in length speed construction, save on costs. Because Transitop panels weigh only 4.7 lbs. per square foot in 1-9/16″ thickness, they reduce the dead-load factor. This permits lighter framing and less expensive construction.

Find out more about how you can save on construction cost by using Transitop panels for insulated curtain walls, as free-standing or structural interior walls, for roof deck construction. For illustrated brochure "J-M Asbestos Transitop," write to: Johns-Manville, Box 158, New York 16, N. Y. In Canada, 565 Lakeshore Rd. E., Port Credit, Ont.

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The bold, black markings are bonded to the basic metal . . . protected with several electroplatings that give extra strength to the blade. The final coat is Lufkin's exclusive Chrome Clad finish. Glare free, smooth, rust resistant . . . the most durable tape rule you can buy.

Plated steel case is light, strong, long-lasting. Blades are easily replaceable. Come in 6, 8, 10 and 12-foot lengths . . . either ½" or ¾" width.

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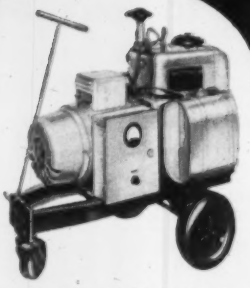

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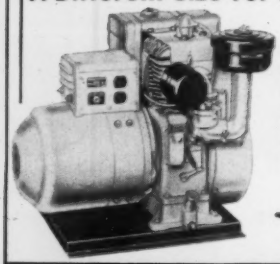

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These rugged, heavy-duty 3-wheel dollies are used as a permanent mounting for 3, 4, and 5 KW electric plants where portability is desired by contractors, bridge builders, mine operators, road constructors, railroads, cities and municipalities.

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Four 80,000 c.p. flood lights raise to 8½ ft.—aim in all directions. Control panel has duplex receptacles for extension light and power tool lines—voltage regulator—circuit breakers—fused circuits.

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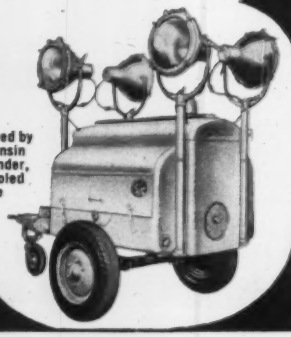

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Obituaries

Arthur D. Kidder, 83, an authority on land surveying. During his career, he participated in the opening of the Kiowa and Comanche Indian reservations in Oklahoma as a U.S. boundary commissioner.

John K. Hoskins, 73, former assistant surgeon general and chief of the sanitary engineering division of the U. S. Public Health Service. Joining PHS in 1913, he capped a distinguished career in sanitary engineering with his appointment as first chief sanitary engineer for the service when that post was created in 1943. In the early 1900's, Mr. Hoskins headed an outstanding group of engineers and scientists stationed in Cincinnati, whose investigation of pollution conditions in the Ohio River added considerably to the art of water pollution control. The retired PHS chief was a past president of the Federation of Sewage and Industrial Wastes Associations.

Anthony A. Olis, 59, president of the Chicago Sanitary District. A lawyer, Mr. Olis was selected to the board in 1946 and became president in 1950. He led a long fight for federal authorization of increased diversion of Lake Michigan waters through the Chicago River and sanitary canal system for flushing purposes.

Cecil S. Lynch, 74, a member and former chairman of the Arkansas Highway Commission, and a director and former vice president of the Arkansas Power & Light Co. A graduate of the University of Missouri's College of Engineering, he was with AP&L for 39 years and during that time directed most of the major construction projects performed by the company.

Benjamin Arp, 68, retired construction superintendent of Utah Construction Co. In his 47 years with Utah, he gained a nationwide reputation for his work in tunnel construction, and in 1957 received the Beaver's Golden Award. Among the projects handled by Mr. Arp were sections of the New York Aqueduct and San Francisco's Hetch Hetchy water development, as well as tunnels for many railroads, the Nevada Irrigation Company, the Metropolitan Water District of Southern California, and others.

R. R. Ireland, 58, chief right-of-way engineer for the Kansas State Highway Department. He had worked for the Illinois Highway Department before joining the Kansas agency in 1931.

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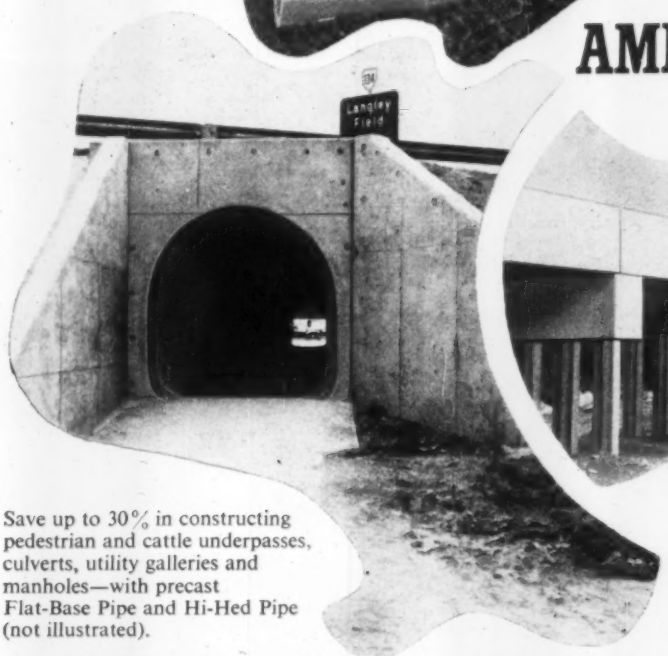

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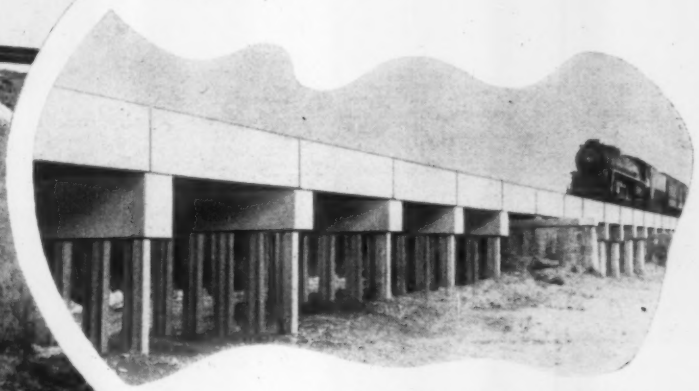

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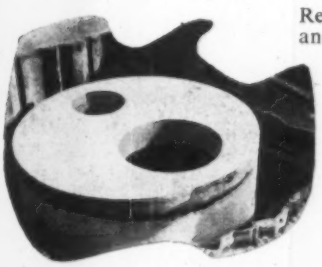

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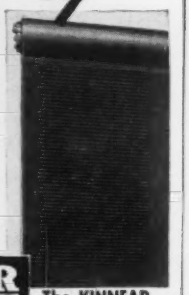

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Partial Rescission

A valid contract change alters liability to sub

If the terms of a subcontractor are changed by the mutual consent of the owner, general contractor and subcontractor so that the owner becomes directly liable to the sub for part of the work, the new agreement is enforceable. In legal terms, a partial rescission of the original contract has occurred.

An illustrative case is reported in Georgia. Facts are these:

The owner of a parcel of land entered into a contract for the construction of a building. The general contract called for electric wiring and the installation of electrical equipment as set forth in the specifications. The general contractor sublet the electrical work to another contractor.

Before the subcontractor started work, the owner decided to make radical changes in the electrical work.

Thereafter, a conference was had between the owner, general contractor and the subcontractor for the electrical work and an agreement was reached whereby the subcontractor would perform the work in accordance with the revised specifications. The original contract was $1,798. Under the new arrangement the general contractor was to pay the subcontractor the sum of $1,798 and the owner was to pay the subcontractor for the increased cost of the work resulting from the changes.

After the new arrangement was made, the electrical work was completed and the general contractor paid him the amount called for by the original contract, that is, $1,798. The actual cost of performing the work was $4,495.27. The electrical contractor presented the owner with a bill for $2,495.27, which represented the increased cost of the work resulting from the change in the specifications. The owner paid the electrical contractor $200.00.

The owner's engineer inspected the job and certified that it had been performed in accordance with the specifications. The subcontractor demanded payment of the balance due from the owner but no payment was made.

When suit was brought, the owner requested dismissal of the action on the ground that the subcontractor's right of action was solely against the general contractor. The court held that while the original contract was between the general contractor and the subcontractor, there was a partial rescission of the contract as to the electrical work and that the agreement between the parties that the general contractor should pay the original price for the electrical work and that the owner would pay for the increased cost resulting from a change in the specifications was enforceable. This judgment was affirmed on appeal.[1]

(1) Farr v. McCook, 98 S.E. 2d 584, Court of Appeals of Georgia, May 17, 1957.

Party Allowed to Rescind Joint Venture Agreement

If one party to a joint venture repudiates the contract, the other party may rescind the agreement and recover the amount he has contributed to the venture.

In a Delaware case, the parties had agreed to join in joint venture and to organize a corporation to transact the business. A corporation was formed and the stock divided between the two participants to the agreement. There was also an agreement whereby the parties were to receive certain compensation for their services.

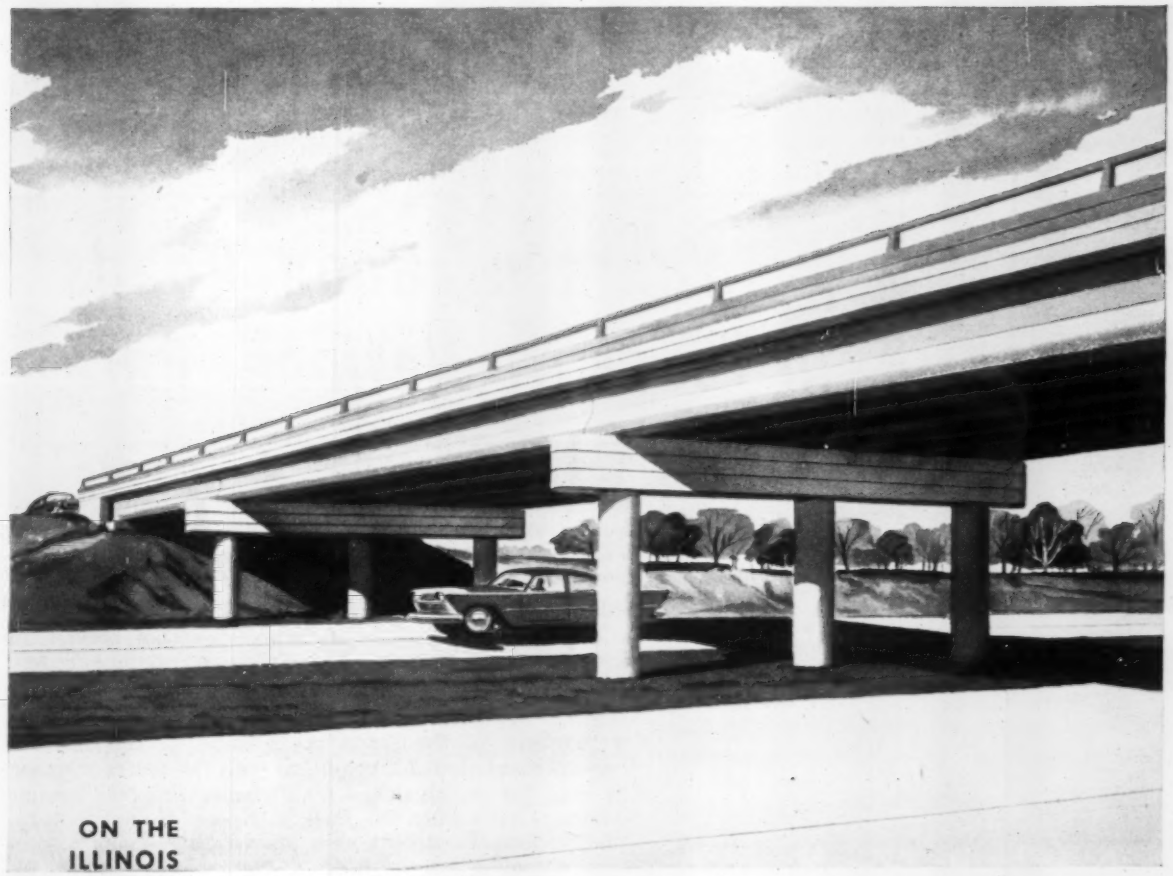
One of the parties to the agreement (the major stockholder of the corporation) reduced the salary of the other stockholder in violation of the joint venture agreement. The latter then brought an action to rescind the agreement and for a return of the money invested in the joint venture. He obtained a judgment.[1]

The court stated: "An outright refusal of one party to a contract to perform the contract or its essentials constitutes such a repudiation as to entitle the other contracting party to treat the contract as rescinded, Vol. 12, Am. Jur., Contracts, Section 442, p. 1024, and, as is generally held, an unjustified refusal to perform basic terms of a contract warrants rescission rather than mere damages, Vol. 12, Am. Jur., Contracts, Section 440, p. 1020."

(1) Sheehan v. Hepburn, 138 A. 2d 810, Court of Chancery of Delaware, Feb. 20, 1958.

These summaries of court decisions are prepared by I. Vernon Werbin, Esq., New York attorney and licensed professional engineer, who is author of the following books published by McGraw-Hill Book Company, Inc.: *Legal Phases of Construction Contracts; Legal Guide for Contractors, Architects and Engineers;* and *Legal Cases for Contractors, Architects and Engineers.*

WHEN AMERICA BUILDS FOR ECONOMY . . . IT BUILDS WITH CONCRETE



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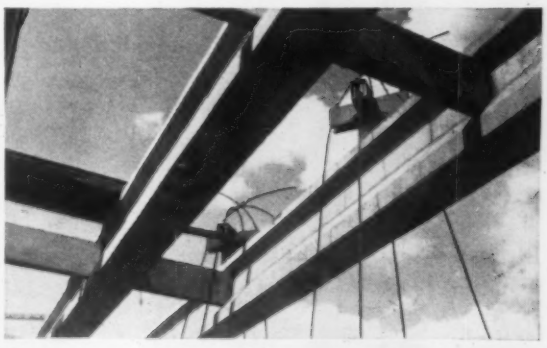
precast, prestressed concrete for bridges will reduce costs $4,000,000

A full-scale test bridge showed engineers new ways to cut costs. 218 more prestressed bridges will follow . . . at savings that make every fifth bridge free!

Engineers found big economy when they checked prestressed concrete for bridges on Illinois Toll Highways. They're cutting approximately $4,000,000 from original estimated costs—with no sacrifice of strength or durability.

This is a mass production job, the biggest yet of its kind. Designs are standardized. Prestressed stringers are being produced in casting yards to achieve top economy and uniformly high quality. All this enables contractors to meet road opening schedules with resultant financing economies.

Whether the job calls for hundreds of bridges or just a few, savings really add up with prestressed concrete. And savings are just starting! Maintenance costs will be the lowest known on any major bridge system. That's why you'll be seeing more such modern bridges as Interstate System construction moves ahead.



Beverly Road test bridge. Tests proved value of prestressed concrete for economical highway bridges.

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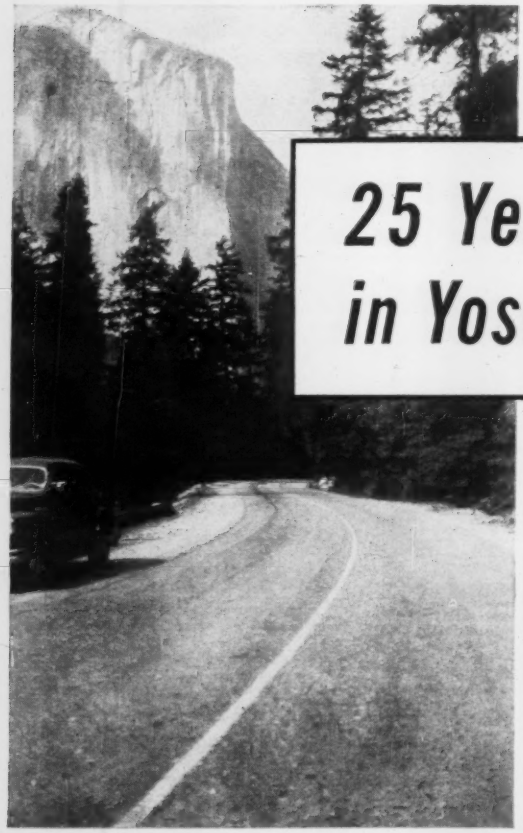

1933: Heavy-duty pavements of Bitumuls Penetration Macadam.

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Just over 25 years ago, engineers of Yosemite National Park prepared for an expanded program of road surfacing. Located far from any hot-mix plants, they specified the then-new Bitumuls® Penetration Macadam type of construction.

This sound pavement provided excellent service, even in areas where snow, ice, and rigorous weather prevail for many months of the year. These roads in Yosemite are now open the year-around for winter sports enthusiasts.

With the improved road system, visitors came to the Park by hundreds of thousands. As a result of this heavier-than-anticipated traffic, combined with the severe weather, the need for an organized maintenance program became obvious. That's when the Park Engineers turned to Bitumuls Surface Treatment as a proved "life saving" maintenance tool.

1948: For 15 years, occasional Bitumuls Surface Treatments have kept pavements in top shape.

1957: Newly-introduced Bitumuls Slurry Seal also used for road and walk maintenance.

Bitumuls Surface Treatments not only successfully extended the life of the pavements, but also provided all-year, skid-proof, safe surfaces.

In 1957, Park officials employed another American Bitumuls development known as "Bitumuls Slurry Seal." This new technique is a very economical "life saver." It performs a "holding action" against weathering and further deterioration, permitting continued use of the pavement ahead of planned resurfacing.

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Call our nearest Bitumuls office for details on these paving and maintenance techniques, and for the "Bitumuls/Life Saver" story.

Books

Anaerobic Digestion

BIOLOGICAL TREATMENT OF SEWAGE AND INDUSTRIAL WASTES, VOL. 2—ANAEROBIC DIGESTION AND SOLIDS-LIQUID SEPARATION—A symposium edited by Brother Joseph McCabe and W. W. Eckenfelder, Jr., 330 pp. Reinhold Publishing Co., 430 Park Ave., New York 2, N. Y. $11.50.

This book contains the 28 edited papers given at a conference on anaerobic digestion and solids-liquid separation at Manhattan College in April, 1957. The papers, containing new information and reviewing recent advances, are divided into three sections. Part one, anaerobic digestion, includes papers on biochemistry and biochemical changes of anaerobic decomposition, high rate digestion, instrumentation, and laboratory, pilot plant and plant scale operations on waste sludge digestion and anaerobic stabilization of liquid wastes.

Part two covers separation of solids from wastes by sedimentation and flotation. It includes papers on hydraulic characteristics of various settling tanks, and mathematical formulation of the flotation process and analysis methods to obtain design data.

Elutriation, chemical conditioning, and vacuum filtration are presented in part three. Lab methods of finding resistance and compressibility are explained and design formulas using these and other parameters are derived.

Renaissance Science

NATURAL MAGICK—by John Baptista Porta. Edited by Derek J. Price, The Smithsonian Institution. 416 pp., Basic Books, Inc., 59 Fourth Ave., New York 3, N. Y. $7.50.

The first edition of this book was published in 1558 in Naples. It contained what is believed to be the only printed record of the findings of a scientific society that flourished in the 16th century—the forerunner of the Accademie dei Lincei and the Royal Society of London.

The current edition is an accurate reproduction of the English translation, which was published a century later in London; no attempt is made at modernization of language.

The author, John Porta, and the Society he organized performed experiments and made investigations of physical phenomena. A condition of membership into the group was that each man must have contributed a new discovery or fact in natural science.

Their records contain a curious mixture of half-told half truths, useful

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recipes and observations. Yet they also include passages that are peculiarly accurate of latter day inventions, and are of interest in the history of science. The chapter on "Strange Glasses," for example, describes a combination of concave and convex lenses for viewing objects near or distant. There are also chapters on how to temper steel, soften and harden iron, change metals and counterfeit gold—as well as some more abstruse chapters on invisible writing, beautifying women and cookery.

As a "How To" book, *Natural Magick* probably has little to recommend it to present day readers. But if dipped into for pleasure, its chapters can evoke vividly the world of late sixteenth century science.

Reports and Pamphlets

SNAP-THROUGH AND POST-BUCKLING BEHAVIOR OF CYLINDRICAL SHELLS UNDER THE ACTION OF EXTERNAL PRESSURE—by H. L. Langhaar and A. P. Boresi. Bulletin No. 443. University of Illinois Engineering Experiment Station, Urbana.

THE CRACK RESISTANT PROPERTIES OF GYPSUM LATH AND PLASTER ANGLES FORMED BY THE INTERSECTION OF WALLS AND WALLS WITH CEILINGS REINFORCED WITH VARIOUS TYPES OF METAL REINFORCEMENT—by Edwin L. Saxer. Keystone Steel & Wire Co., Peoria, Ill.

HOUSING ALMANAC, 1957—National Association of Home Builders, 1625 I St., N.W., Washington 6, D. C. To members $1.00; non-members $2.00.

VARIETIES OF SUBMARINE SLOPE FAILURES—by Karl Terzaghi. Series No. 52. Harvard University, Pierce Hall, Cambridge, Mass. 60¢.

STABILIZATION OF AN ORE PILE BY DRAINAGE—Series No. 53. Harvard University, Pierce Hall, Cambridge, Mass. 60¢.

BITUMINOUS PAVING MIXTURES—Bulletin 160. 122 pp. Highway Research Board, 2101 Constitution, Washington, D. C. $2.40.

THERMAL RESISTANCE OF AIRSPACES AND FIBROUS INSULATIONS BOUNDED BY REFLECTIVE SURFACES—Building Materials and Structures Report 151. Superintendent of Documents, U. S. Govt. Printing Office, Washington 25, D. C. 20¢.

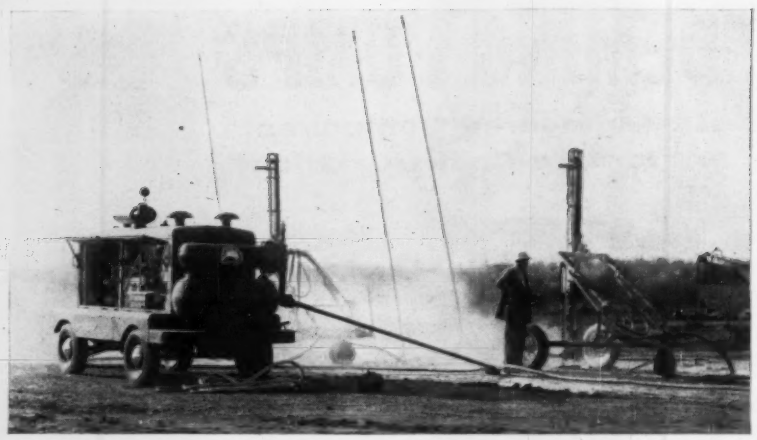
THE STEADY, AXIALLY SYMMETRIC FLOW OF A VISCOUS FLUID IN A DEEP ROTATING CYLINDER HEATED FROM BELOW—University of California Press, Berkeley 4, Calif. 50¢.

BUILDINGS FOR INDUSTRY—390 pp. F. W. DODGE CORP., 119 W. 40th St., New York 18, N. Y. $9.75.

DIGITAL COMPUTERS—by R. K. Livesley. 53 pp. Cambridge University Press, 32 E. 57th St., New York 22, N. Y. $1.75.

A MANAGEMENT GUIDE TO ELECTRONIC COMPUTERS—by William D. Bell. 403 pp. McGraw-Hill Book Co., 330 W. 42nd St., New York 36, N. Y. $6.50.

SNOW COVER CHARACTERISTICS AT AKLAVIK AND RESOLUTE, NORTHWEST TERRITORIES—National Research Council of Canada, Ottawa, Canada. 25¢.



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- Steel edge armored, steel reinforced slabs.
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- Durable, smooth riding, low maintenance.

PERMACRETE PRODUCTS CORPORATION
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Columbus, Ohio Greenville, Ohio Chicago, Illinois
Write for Bulletin X-541

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JACKS
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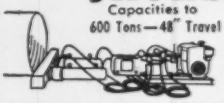

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WARREN-KNIGHT
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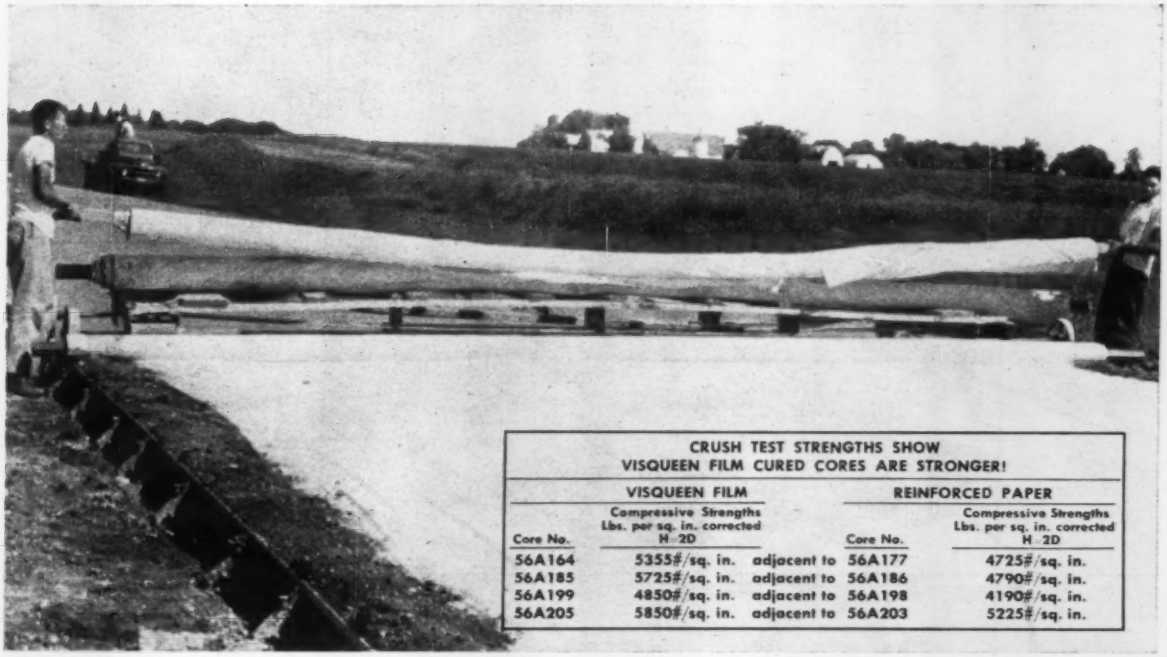

CRUSH TEST STRENGTHS SHOW VISQUEEN FILM CURED CORES ARE STRONGER!

VISQUEEN FILM			REINFORCED PAPER	
Core No.	Compressive Strengths Lbs. per sq. in. corrected H-2D		Core No.	Compressive Strengths Lbs. per sq. in. corrected H-2D
56A164	5355#/sq. in.	adjacent to	56A177	4725#/sq. in.
56A185	5725#/sq. in.	adjacent to	56A186	4790#/sq. in.
56A199	4850#/sq. in.	adjacent to	56A198	4190#/sq. in.
56A205	5850#/sq. in.	adjacent to	56A203	5225#/sq. in.

ONLY WHITE OPAQUE VISQUEEN™ FILM GIVES YOU THESE COST-CUTTING ADVANTAGES FOR CONCRETE CURING

ADVANTAGE	REASON WHY
1. Up to 23 re-uses plus low first cost cut curing costs to a fraction of a cent /sq. ft. of .004" white opaque VISQUEEN film.	1. Superior uniformity of thickness. No thin, weak spots. A *stronger* curing blanket—hence greater durability.
2. Lower Labor Costs.	2. Far lighter than other materials. Hence easier, more speedily handled. 1,000 sq. ft. weighs only 20 lbs. *Stays* light—will not absorb moisture.
3. Saves Time and Handling.	3. Additional watering not needed. Film rolls up easily. Needs no drying or special handling.
4. Safe and Stable.	4. Inert. No chemical reactions with concrete. Leaves no deposit. Will not rot or mildew.
5. Wider Widths, Better Packaging.	5. Only VISQUEEN film comes in standard widths—or blankets—and *seamless* widths through 32′. Available in 14′ roll widths with no folds.
6. Additional Uses.	6. VISQUEEN film is used by road builders and contractors for rain blankets, equipment and material covers.
7. Stronger Cures.	7. See chart in illustration.

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VisQueen

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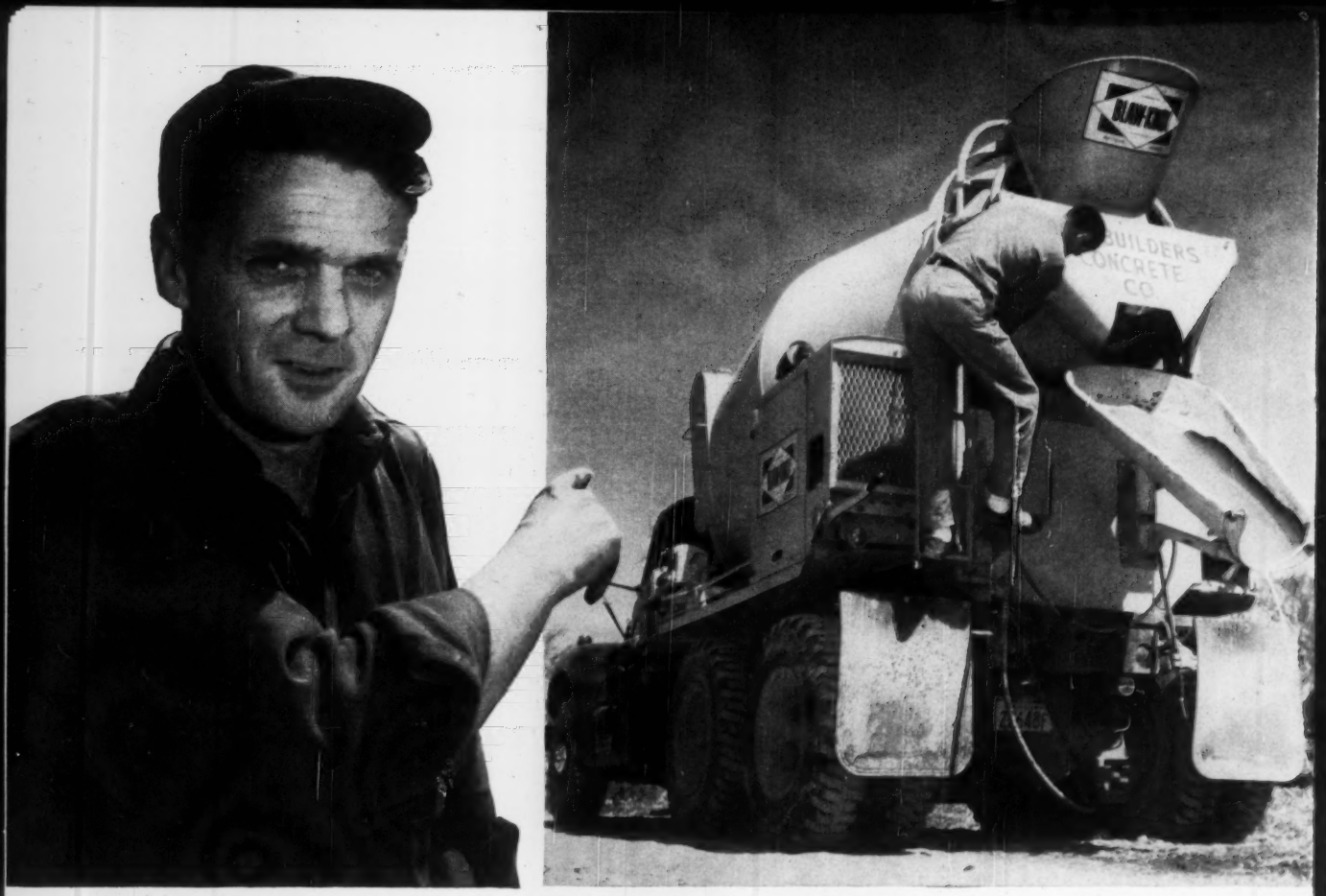

Garage superintendent Howard Doolittle of Erie Builders Supply Company likes the trouble-free operation, maneuverability, and weight distribution of Blaw-Knox Mixers, assigns them to his most experienced drivers.

"Our records show...

These Blaw-Knox Mixers had the lowest cost per mile per cubic yard"

"We conducted a one year survey after we added the Blaw-Knox Mixers to our fleet. We found that the total amount of concrete carried per truck was 200 cubic yards greater per month with the Blaw-Knox Mixers," says Howard Doolittle, garage superintendent for the Erie Builders Supply Company, Erie, Pa.

"As far as maintenance is concerned, we grease the truck and mixer, check the motor and adjust the clutch every thousand miles. We have had only one minor repair on one of our fleet of seven Blaw-Knox Mixers the first of which we purchased three years ago," he adds.

E. J. Carey, Operations Manager, points out, "their fast loading and unloading, lack of spillage, pouring height, power chute and remarkable weight distribution make them star performers in delivering from our dry and wet mix plants."

Erie Builders Supply operates 24 truck mixers of three different designs. Their own records are proof of the superior performance of the Blaw-Knox Mixers. Ask your Blaw-Knox distributor for a detailed technical report of the experience. Or write the factory direct. There's no obligation.

BLAW-KNOX COMPANY · *Construction Equipment*

300 Sixth Avenue, Pittsburgh 22, Pennsylvania

BLAW-KNOX

Lake Brandt Dam Raised, North Carolina

With new spillway and roller gates, will increase raw water supply at cost of $158,376 per MGD of added capacity

To increase the safe yield of raw water for Greensboro, No. Car. from 15 to 23 MGD, four contracts total $1,267,011. James R. Townsend is city manager. Hazen and Sawyer, New York City, are the consultants.

Contracts:	Amount	% of Total
Potts Brown Co., Charlotte, N.C. and King Hunter, Inc., Greensboro, N.C.		
General contract	$1,242,196	98.0
Crutchfield Plumbing Co., Greensboro, N.C.		
Plumbing	*4,592	0.4
Community Heating & Plumbing Co. Greensboro, N.C.		
Heating & ventilating	*4,228	0.3
Starr Electric Co., Inc., Greensboro, N.C.		
Electrical work	*15,965	1.3
Total awards	$1,267,011	100.0

*Lump sum bids

The work includes raising the existing dam, construction of a new spillway with eight 10x25 ft fixed roller type movable gates, a new 12 MGD pumping station and intake, the moving and installing of three 17 MGD diesel engine pump units, backfilling and sealing old spillway and intake, and mechanicals.

The city furnishes one new 17 MGD diesel engine pump unit and two existing units to be transferred from old pumping station.

Concrete specifications are: Class A, 6.5 sacks of cement per cu yd, compressive strength, 3,500 psi; Class B, 5 sacks of cement per cu yd, compressive strength, 2,500 psi.

Centrifugally formed cast iron pipe must conform to ASA specifications A21.6 and 21.8, Class 25 thickness, and pit cast iron pipe to Class 21.2, Class 5 thickness. Cast iron fittings must have Class D bell and spigot joints, AWWA specifications C100-08, or ASA 21.11-53 mechanical joints complete with rings, rubber gaskets, lead tips and high strength, high-treated cast iron tee-head bolts and heavy unfinished hexagon nuts.

All cast iron pipe and fittings, except sleeves, must have mortar lining conforming to ASA specifications A21.4-1952. Mortar lining must be protected by a bituminous seal coat. Outside coal tar coating must be applied to all pipe and fittings.

Prevailing wages in Greensboro include: skilled laborers, $1.95; semi-skilled laborers, $1.45, except that reinforcing steel workers are paid $2.25. Minimum wage for common labor is $1.00.

The nine bids on the general contract included:

1C Potts Brown Co. Charlotte, and King Hunter, Inc., Greensboro, N. C	$1,242,196
2 Blythe Bros. Co., Charlotte, and Howard Constr. Co., Greensboro, N. C	1,296,825
9 E. G. Singletary & Co., Greensboro, N. C	1,740,279
EE Hazen & Sawyers, New York City	1,491,000

Bids: 4-14-58 Items	Unit	Quantity	Unit Prices 1 C	2
Clear & grub	ac	140	$410.00	$275.00
Existing structs, demolish	ls	job	40,596	24,000
Site work, misc	ls	job	21,798	9,500
Exc, earth, fill & bkfl	ls	job	176,561	182,200
rock, extra	cy	10	55.00	22.50
Embark, dam fndn, prepare for	ls	job	220.00	3,000
earth	ls	job	28,461	20,000
additional rolling	hr	10	15.00	15.00
Granular filter material	ls	job	14,063	38,000
Riprap & stone fill	ls	job	18,999	38,000
Paving	ls	job	10,664	9,500
Concrete, cl A, 4200 cu yd				
cl B, 6200 cu yd	ls	job	355,824	437,100
reinforced, bridge girders	ls	job	21,488	17,600
Steel, reinforcing	ls	job	63,394	63,000
sheet piling, left in pl	sf	5,400	3.00	3.50
Joint materials	ls	job	5,803	7,500
Cast iron pipe, outside	ls	job	37,227	51,000
Drain pipe, outside	ls	job	10,217	6,700
Sluice & roller gates, 8 10'x25'	ls	job	109,207	99,600
Cast iron pipe, inside	ls	job	26,744	29,700
Valves	ls	job	62,540	63,000
Venturi meter & gages	ls	job	10,073	10,400
Diesel engines, pumps, inst	ls	job	18,554	8,500
Chlorination equipment	ls	job	9,750	5,200
Hoisting equipment	ls	job	5,445	5,000
Pump sta superstruct & furn	ls	job	63,488	53,000
Metal work, misc	ls	job	36,974	33,100
Painting	ls	job	6,698	9,100
Fence, relocation of existing	lf	2,000	1.00	1.00
new, over wet well	ls	job	305.00	350.00
Grade & seed	ls	job	8,803	11,000
Planting allowance	ls	job	2,000	2,000

Commence: 5-15-58 Completion schedule: 600 cal days

Towers for Forest Fire Control, New Mexico-Arizona

Difficult access to the sites will require the use of bulldozers for clearing paths to mountain ridges on this job for the Bureau of Indian Affairs, Dept. of Interior, Albuquerque, N. M., Tom Wellems engineer for plant design and construction. Work includes the erection of two 90-ft and cab lookout towers for forest fire control at Toadlena, N. M., about 70 miles north of Gallup, and at Oakridge, Arizona.

The award at $29,883 to John H. Evans Co., Phoenix, Arizona, is 36% above the engineer's estimate.

Prevailing wages on the job range from $3.17 for skilled, through $2.45 for semi-skilled, to $2.07 for common laborers.

The contractor furnishes all materials.

Construction commenced June 6, 1958 and completion is scheduled for 120 calendar days. Liquidated damages are $10. a day.

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Materials and Labor Prices

Market Quotations by ENR Field Reporters

See following ENR issues for OTHER PRICES:

- Wood Products, Glass, Explosives, Chemicals: Last, Jun. 19; Next, Jul. 24
- Clay Products, Lime, Plaster, Paint, Roofing: Last, Jun. 26; Next, Jul. 31
- Wage Rates, Building Board, Lath, Insulation: Last, Jul. 3; Next, Jul. 31
- Cement, Aggregate, Ready-Mixed Concrete, Asphalt: Last, Jul. 10; Next, Aug. 7

IRON AND STEEL PRODUCTS—PER 100 LBS. BASE MILL PRICES

	STRUCT SHAPES—	PLATE CARBON STEEL	REINF BARS* billet	RIVETS ½-in. structural	SHEET PILING Base	STEEL RAILS Per Net Ton Standard	STEEL RAILS Per Net Ton Light	TRACK SUPPLIES Angle Bars	TRACK SUPPLIES Std Spikes	TRACK SUPPLIES Tie Plates	TRACK SUPPLIES Track Bolts
Birmingham Area	$5.275	$5.10	$5.425	$12.25	.....	$110.50	$130.00	$6.975	$9.75	$6.60	.....
Chicago Area	5.275	5.10	5.425	12.25	$6.225	110.50	130.00	6.975	9.75	6.60	.....
Pittsburgh Area	5.275	5.10	5.425	12.25	6.225	110.50	130.00	6.975	9.75	6.60	$14.75
Buffalo Area	5.275	5.10	5.425	12.25	6.225	110.50	130.00	6.975	9.75	6.60	14.75
Cleveland	.....	.....	5.425	12.25	6.225	.....	.....	.....	.....	.....	14.75
Youngstown Area	.....	.....	5.425	.....	.....	.....	.....	.....	9.75	.....	.....
Geneva	5.275	5.10	.....	.....	.....	.....	.....	.....	.....	.....	.....
Los Angeles	5.975	.....	6.125	.....	6.225	.....	.....	.....	9.75	6.75	.....
Pueblo	.....	.....	.....	.....	.....	.....	.....	69.75	9.75	6.60	.....

* Fairless Works, $5.575.

IRON AND STEEL PRODUCTS—F.O.B. WAREHOUSE, PER 100 LBS., BASE PRICE

	STRUCTURAL SHAPES Per 100 lb. base price	REINFORCING BARS Per 100 lb., base price 5 tons to carload lot New billet	REINFORCING BARS Per 100 lb., base price 5 tons to carload lot Rail steel	EXPANDED METAL LATH Per 100 sq. yd., carload lots Std. diamond mesh, 3.4 lb.	EXPANDED METAL LATH Per 100 sq. yd., carload lots Std. ribbed 3.4 lb.	WELDED FABRIC REINFORCING Per 100 sq ft., carload lots fob mill
Atlanta	$9.05	9.25	$9.01f	$52.00	$57.00	
Baltimore	9.45	8.45j	.....	42.00	46.50	
Birmingham	8.64y	8.60y	8.60y	57.00p	63.00p	
Boston	9.63a	8.25	8.25	46.50	51.00	4 × 10 in., No. 8 & 10 wires— Joliet, Ill., Donora, Pa., Monessen, Pa. $3.98
Chicago	8.79R	6.88½/6.91gu	6.91gu	52.00‡	63.00‡	
Cincinnati	9.18ak	9.08ru	.....	43.50mn	48.00mn	
Cleveland	9.01	6.89c	.....	44.50‡	49.00‡	4 × 12 in., No. 8 & 12 wires— Joliet, Ill., Donora, Pa., Monessen, Pa. $3.62
Dallas	9.25	7.75	7.75	44.00	48.50	
Denver	9.84	8.95c	.....	57.00n	63.00n	
Detroit	9.18	7.15g	.....	45.00	63.00R	6 × 6 in., No. 6 & 6 wires— Joliet, Ill., Donora, Pa., Monessen, Pa. $4.17
Kansas City	9.31a	8.10	.....	49.00	60.00	
Los Angeles	8.60fdR	7.35	.....	57.00	63.00	
Minneapolis	9.08d	9.26b	9.26b	42.50	46.00	
Montreal	7.90–8.60C/8.20–8.90A	7.00/7.50FG	7.00/7.50FG	65.70k	70.20k	
New Orleans	.....	8.00gks	.....	47.00	52.00	
New York	9.45‡s	8.35y	8.35y	50.50n	57.00ns	
Philadelphia	8.80/9.00	7.80/8.00	.....	42.50‡	47.00‡	
Pittsburgh	8.64y	7.10y	.....	46.00‡w	49.50‡w	
St. Louis	9.10s	8.45c	8.45c	61.00l	62.00l	
San Francisco	9.50	9.45j	.....	51.00	55.00	
Seattle	9.80nD	8.85e	.....	63.50n	68.00n	
Toronto	9.00fl	7.85	7.85	46.00nql	49.00nql	

EXTRAS, per cwt—Quantity (applies to LCL shipments only): under 1,000#, +$1.50; 1,000–1999#, +$1.20; 2,000–4999#, +$1.00; 5,000–9999#, +90¢; 10,000–19,999#, +60¢; 20,000–29,999#, +30¢; 30,000–39,999#, +10¢; 40,000# & up, none. Size†: #2, #3, +$2.50; #4, +$1.40; #5, +$1.00; #6, +70¢; #8, #7, #9, #10, #11, +50¢. ◆Bending: heavy, +$2.20 (except in New York City and surrounding metropolitan area where bending must be done on the job). ◆Engineering (details and placing from designs by others): over 500 tons, +45¢; 200–499 tons, +50¢ but not over $4500; 75–199 tons, +65¢ but not over $2000; 20–74 tons, +75¢ but not over $975; 5–19 tons, +85¢ but not over $300; under 5 tons, +$1.00 but not over $85. Min. charge $25. Design only: +60¢.

Quantity extras, per cwt: under 100#, +$9; 100–399#, +$6; 400–999#, +$3.50; 1000–1999#, +1.00; 2000–4999#, base price; 5000–9999#, —10¢; 10,000–19,999#, —30¢; 20,000–29,999#, —50¢; 30,000# and up, —70¢

*‡ Delivered. *" Aver. of Canadian & American. *a 2000–9999#. *b 10,000–15,999#, fob city. *c 20 tons or over. *d 10,000–29,999#. *e Intermediate struct'l. *f Incl. delivering in free zone. *g CL. *h list price; dominion tax exempt; add provincial and municipal taxes. *i add dominion, provincial and municipal sales taxes. *j intermediates and hard grade. *k fob city. *l delivered; contractor to do unloading. *m copper alloy. *n LCL. *o asphalt coated. *p del. of 500 sq. yd. or more. *q 2.5 lb. *r 2% off for cash. *s 2,000–4,999#. *t add 16.5¢ del. *u add 7.5¢ switch. *v incl 15¢ del. *w truck lots. *y add 15¢ del. *z add 10¢ del. *A American made. *C Canadian made. *D ½% for cash. *E 30,000 or over. * F Federal tax exempt. *G add 10¢ switch. *H 8.85 without tariff charges. *I 3 lb $80.00. *J 3 lb $86.00. *R: revised

PLUMBING, HEATING, WATER, SEWER AND DRAIN PIPE

	C. I. PIPE PRICE INDEXa	ASBESTOS CEMENT PIPE per lin. ft. f.o.b. city 6" Press Cl. 150	6" Press Cl. 1500	12" Sew Cl. 2400	CLAY SEWER PIPE Per ft., delivered ASTM C13-54 8 in.	12 in.	ASTM C200-55T 24 in.	36 in.	CLAY DRAIN TILE† Per 1,000 ft., car load lots, f.o.b. ASTM C4-55 6 in.	8 in.	CONCRETE SEWER PIPE§ Per ft., delivered ASTMC 14-55 12 in.	24 in.
Atlanta	130.5	$1.56/1.64	$2.36	2.68	$ .53	$ .98	$	$	$209.00s	$334.00	$1.55m	$4.40m
Baltimore	140.4	1.56/1.64	2.19	2.54	.665	1.28	5.08r	12.71	187.80	289.20	1.01	2.75m
Birmingham	125.8	1.56/1.64	2.26	2.62	.46	.86	3.70w	10.37w	260.00‡	440.00‡	1.25m	2.75
Boston	143.5	1.58/1.66	2.19	2.54	.784qrt	1.512qrt	6.225qrt	.....	215.40r	330.60r	1.56mg	3.47mg
Chicago	140.9	1.56/1.64	2.19	2.54	.93m	1.78m	7.52m	21.16m	220.00m	330.00m	1.30	4.00
Cincinnati	135.5	1.58/1.66	2.19	2.54	.665t	1.2825t	4.905t	12.505	240.00	370.00	.85m	3.25m
Cleveland	141.7	1.58/1.66	2.19	2.54	.609s	1.1745s	4.995t	12.71t	131.40m	204.60m	.85m	3.50m
Dallas	137.8	1.58/1.66	2.26	2.62	.550	.955	4.40b	9.75b	.....	.....	1.17	2.52
Denver	148.2	1.79/1.73	2.36	2.68	.48n	.87n	3.73n	.....	.....	.....	.75m	2.75m
Detroit	142.1	1.58/1.66	2.19	2.54	.90m	1.70n	6.80n	18.50n	182.00m	280.25m	1.10	4.05
Kansas City	138.5	1.60/1.66	2.26	2.62	.61	1.105	5.6946	13.08	278.00	493.00	.95	2.90
Los Angeles	148.6	1.65/1.73	2.19	2.54	.746l	1.616l	6.426l	15.366l	370.00l	530.00l	1.12	3.32f
Minneapolis	149.9	1.60/1.68	2.26	2.62	.86mo	1.55mo	6.70mo	.....	.....	.....	2.13h	5.74h
Montreal					1.13u	2.00u	7.00u	13.50u	288.00	545.00	1.17h	3.11f
New Orleans	133.3	1.56/1.64	2.26	2.62	.528	.983	5.21	.....	210.50p	468.00	.85	2.90
New York	138.7	1.58/1.66	2.19	2.54	1.02	1.94	7.58	19.48	.....	.....	1.50	3.60
Philadelphia	138.0	1.56/1.64	2.19	2.54	.68	1.31	5.13v	14.25v	300.00‡	350.00‡	1.75h	4.20h
Pittsburgh	142.9	1.58/1.66	2.19	2.54	.595m	1.15m	4.73m	12.40m	190.00	295.00	1.66x	3.93x
St. Louis	136.9	1.56/1.64	2.26	2.62	.59	1.08	4.45	10.80	180.00l	380.00l	1.45il	3.10il
San Francisco	148.6	1.65/1.73	2.19	2.54	.78d	1.69d	6.72d	16.36d	320.00l	560.00l	1.05m	3.30m
Seattle	149.0	1.65/1.73	2.19	2.54	.726	1.506	6.84	.....	255.00c	.....	1.95fcy	4.75fcy
Toronto	.....	.....	.....	.....	.80	1.50	6.00	.....	157.00	280.00	.92	3.21

*† Extra quality. *‡ delivered. *a PRICE INDEXES for CENTRIFUGAL CAST IRON PIPE (Include carload freight allowed to city). These also serve as the HISTORICAL RECORD of THE $ PER NET TON PRICE of CLASS B, B&S, PIT CAST IRON PIPE. F.O.B. Foundry Price Indexes Birmingham, Ala., 125.8; Burlington, N. J., 134.6. *b Extra strength. *c 4-in., $140. *d SS361-A. *f 21 in. *g culvert pipe; reinf., ASTM C 75-56. *h reinf., ASTM C 75-54. *i reinf., ASTM C 76-55. *j centrispun; no standard specs. in Canada. *k 2% cash. *l fob plant. *m truck del. *n LCL del., fob truck. *o listed price based on LCL (no min.). *p freight allowed to destination in city. *q ASTM C 13-40. *r CL fob origin, freight allowed. *s 1 ft lengths. *t 3 ft lengths. *u CESA A 60-1941. *v standard strength. *w SS; add 20% for d.s. *x fob city. *y Reinforced.

*WROUGHT STEEL PIPE (Full standard weight) Discount from list; see footnotes

Mill	3½ to 6 in., Lap Weld+ Galv. %	3½ to 6 in., Lap Weld+ Black %	8 in., Butt Weld+ Galv. %	8 in., Butt Weld+ Black %	2½ to 4 in., Butt Weld+ Galv. %	2½ to 4 in., Butt Weld+ Black %
Lorain, Ohio	.....	.....	10.75	0.50	10.75	0.50
Aliquippa, Pa	.....	.....	10.75	3.00	10.75	0.50
Sparrows Pt., Md.	.....	.....	14.75	1.50	10.75	0.50
Benwood, W. Va.	.....	.....	10.75	0.50	10.75	0.50
Youngstown, O.	.....	.....	10.75	0.50	10.75	0.50
Indiana Harbor, Ind.	.....	.....	15.75	0.50	10.75	0.50
Sharon, Pa.	.....	.....	10.75	0.50	10.75	0.50
Wheatland, Pa.	.....	.....	10.75	0.50	10.75	0.50
Etna, Pa	.....	.....	10.75	0.50	10.75	0.50
Fontana, Calif.	.....	.....	3.25	+13.00	10.75	0.50

Mill	6 in., Lap Weld+ Galv. %	6 in., Lap Weld+ Black %	4 in., Lap Weld+ Galv. %	4 in., Lap Weld+ Black %	2½ to 3½ in., Lap Weld+ Galv. %	2½ to 3½ in., Lap Weld+ Black %
Lorain, Ohio	.....	.....	.....	.....	.....	.....
Aliquippa, Pa	6.25a	6.25a	+10.50a	+10.50a	+8.00a	.....
Sparrows Pt., Md.	.....	.....	+11.50a	+11.50a	.....	.....
Benwood, W. Va.	6.25	6.25	+10.50a	.....	.....	.....
Youngstown, O.	6.25ab	6.25ab	.....	.....	.....	.....
Indiana Harbor, Ind.	.....	.....	.....	.....	.....	.....
Sharon, Pa.	6.25a	.....	+10.50a	.....	.....	.....
Wheatland, Pa.	0.50	.....	+9.75d	.....	.....	.....
Etna, Pa	4.50d	.....	+24.00ab	.....	.....	.....
Fontana, Calif.	+7.25ab	.....	.....	.....	.....	.....

†Threaded and coupled. ‡Continuous weld. 5 and 6 in. ◆6 in. ◆Production discontinued

* WROUGHT STEEL PIPE: Deduct discounts shown above from the following standard list consumers carload prices to get mill price. List prices per ft.(*based on approx. $200 per net ton): Butt Weld ⅛ in., 51½¢; ¼ in., 6¢; ⅜ in., 8½¢; ½ in., 11½¢; ¾ in., 17¢; 1 in., 23¢; 1¼ in., 31½ in., 27½¢; 2 in., 37¢; 2½ in., 58½¢; 3 in., 78½¢. Lap Weld 3½ in., 92¢; 4 in., $1.09; 5 in., $1.48; 6 in., $1.92. Add freight, 3% transport tax for destination price. † Production discontinued November 1957.

WROUGHT IRON PIPE: List prices per ft. same as for wrought steelpipe, but add following "discounts" to get Pittsburgh mill price: Butt Weld—1 in. black, + 65.54, galv., + 95.77; 1¼ in. black, + 65.54, galv. + 95.23, 1½ in. black, + 61.79 galv. + 91.22; Lap Weld—2½ in. to 3 in. black + 67.95 galv. + 95 77; 4½ in. to 6 in. black + 64.74 galv. + 90.68 Add freight rates plus 3% transportation tax to get destination price.

SMALL CAPITAL INVESTMENT
DOES A MAN-SIZE JOB

Dyberry Dam Tunnel finished ahead of schedule with ALL I-R EQUIPMENT

One of the Ingersoll-Rand JR-38B Universal Jackdrills at work on the tunnel face. Each round took 2 to 3 hours, and from 50 to 60 yards of rock were removed at each blast.

Roof-bolting holes were drilled with an assembly consisting of a JR-38B drill mounted on an I-R Jackleg. Investment in drilling equipment was thus kept to the minimum.

Working from a rubber-tired drill jumbo, operator tightens roof bolts with a powerful but light weight Ingersoll-Rand 308 Rotary Impactool.

This 600 cfm Gyro-Flo portable rotary compressor supplied ample air power for all operations—including the blowing of the noon whistle. Air was piped to both portals and drilling was done at one heading while mucking at the other.

The Dyberry Dam diversion tunnel is a small but vitally important part of the Lackawaxen River Flood Control Project. Under normal conditions, Dyberry Dam will be dry—river flow being by-passed through the 8-foot diversion tunnel. But under flood conditions, excess water will be impounded in a large reservoir, preventing damage to downstream communities.

The Hunkin-Conkey Construction Co. of Cleveland, Ohio, contractor of the whole dam project, has completed the tunnel... months ahead of schedule with the Ingersoll-Rand equipment shown here. Using a burn cut hole pattern, JR-38B Jackdrills and Series 113—1½" Carset bits. Eight foot drilled holes advanced tunnel 7 to 8 feet per blast! Holes for roof bolting were drilled by Ingersoll-Rand JR-38B mounted on a Jackleg and roof bolts were set with I-R rotary Impactools. Air power for both headings was supplied by a 600 cfm Gyro-Flo portable compressor.

On large jobs or small, I-R equipment can meet every drilling requirement—and help you meet contract dates at lowest overall cost. Ask your I-R representative for any information you may need.

Ingersoll-Rand

5-845 11 Broadway, New York 4, N.Y.

A CONSTANT STANDARD OF QUALITY IN EVERYTHING YOU NEED FOR DRILLING ROCK

A-W Hydraulic Crane shown bending pipe-type cable at Wright-Patterson Air Force Base, Dayton, Ohio. Two hydraulic outriggers on the sides of the crane hold the pipe while the boom pulls it up into the desired curve.

A-W Hydraulic Crane proved excellent on high-precision electrical project

says Helldoerfer-Castellini, Dayton, Ohio

One of the pioneers in laying underground pipe-type cable, Helldoerfer-Castellini recently completed its largest installation of this kind at Wright-Patterson Air Force Base. The project, which involved laying 10,000 ft. of new cable, cost $2.5 million. Putting the 69,000 v line underground removed the serious hazard of overhead line interference, greatly increasing safety in landings and takeoffs.

The company informs us: "For the single crane we needed to handle this pipe, we made a thorough study of the field, and chose an A-W for several reasons: it is more adaptable and maneuverable than other cranes; it is safe around substations; it has no long cables, the possible snapping of which would be very dangerous; its dependability assures low downtime.

"The 6-in. cast iron pipe sections were 40 to 45 ft. long and carried conductor cable drawn into them before being lowered into the trench. Unusual care was required in handling, bending and installing these pipe sections because of a special insulation to protect them from corrosion.

"The A-W crane proved its capacity for handling pipe, fittings and material for the towers with precision and safety—both to personnel and the things it carried. The only alternative was rental of an $18-an-hour crane. We saved well over $100 a day by deciding to buy an A-W instead."

For complete details on this installation, write for Certified Gould Report No. 5704.

Austin-Western CONSTRUCTION EQUIPMENT DIVISION, AURORA, ILL.

BALDWIN · LIMA · HAMILTON

Power graders • Motor sweepers • Road rollers • Hydraulic cranes

BALDWIN BLH LIMA-HAMILTON

Bids Asked—Low Bidders—Contracts Awarded—

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 36, N. Y., ELSIE EAVES, Manager
J. A. MAHONEY, M. WETZEL, M. E. SCIORRA, D. TARTAGLIA, Reports
J. H. WEBBER, M. R. ROESSLER, E. R. HUBER, Statistics.

NEW ENGLAND

HEAVY CONSTRUCTION—LB & CA

▲† **Lane Constr. Co.**, P.O. Box 911, Meriden, Conn., CA $2,060,847, Airfield pavements and alert facilities, Dow Air Force Base, ENG-19-016-58-182, BANGOR, ME. U. S. Eng., 150 Causeway St., Boston, Mass. Bids June 24. CD 6/27, under LB.

▲† **Wexler Constr. Co., Inc.**, 118 Needham St., Newton Highlands, Mass., CA $1,145,047, est. $1,200,000-$1,300,000. missile support facilities, Presque Isle Air Force Base, ENG-19-016-58-227, PRESQUE ISLE, ME. U. S. Eng., 150 Causeway St., Boston, Mass. Bids June 25. CD 6/27, under LB.

▲† **Paino & LaCava Constr. Co., Inc.**, 372 Winter St., Waltham, Mass., CA $1,019,402, est. $4,836,730 (Schedule 4), addn. pavement and minor structures at 19 NIKE sites, Boston Defense Area, Mass. and Providence Defense Area, R. I., ENG-19-16-58-179, MASSACHUSETTS and RHODE ISLAND. U. S. Eng., 150 Causeway St., Boston, Mass. Bids June 23. CD 6/26, under LB.

▲† **Jefferson Constr. Co.**, 75 1st St., Cambridge, Mass. CA $1,753,198, Item 1, fuel and hydaulics accessories, U. S. Naval Air Station, NBy 10, Spec. 10-56, QUONSET POINT, R. I. Dist. P. Wks. Office, 1st Naval Dist., 495 Summer St., Boston, Mass. Bids June 27. CD 7/3, under LB.

▲ **CONNECTICUT**—State Hy. Dpt., 165 Capitol Ave., Hartford,

Oneglia & Gervasini, Inc., Casson Ave., Torrington, Conn., CA $1,201,575, est. $1,300,000 (8 bidders) 6 span prestressed concrete bridge over Naugatuck River and single span rolled beam bridge over Brook on ext. of Route 68, incl. 1,091 lin. ft. bit. pavement, Proj. 87-78, FA Proj. US 80-(1), Naugatuck-New Haven. Bids June 9. CD 6/11, under LB.

BUILDINGS—LB & CA

▲ **Wexler Constr. Co., Inc.**, 118 Needham St., Newton Highlands, Mass., CA $3,729,708, est. $3,000,000-$4,000,000, BARRACKS, MESSES, etc., Fort Devens, ENG-19-016-58-178, AYER, MASS. U. S. Eng., 150 Causeway St., Boston, Mass. Bids June 25. CD 6/27, under LB.

▲ **John A. Volpe Constr. Co.**, 54 Eastern Ave., Malden, Mass., CA Est. $1,000,000, GRADUATE CENTER on Campus, BOSTON, MASS. Northeastern University, 360 Huntington Ave., Boston, Mass. Bids June 26. CD 5/27.

▲ **Perini Corp.**, 73 Mt. Wayte Ave., Framingham, Mass., CA $2,709,000, HHFA Proj. Mass. 19-CH-25(D) 4 men's DORMITORIES and DINING CENTER, on Campus, WALTHAM, MASS. Brandeis University, 415 South St., Waltham, Mass. Bids June 30. CD 7/3, under LB.

▲† **Kirkland Constr. Co.**, 190 Fifth St., Cambridge, Mass., CA $1,480,794, MISSILE MASTER FACILITY at Fort Heath, ENG-19-016-58-190, WINTHROP, MASS. U. S. Eng., 150 Causeway St., Boston, Mass. Congdon, Gurney & Towle, Inc., 53 State St., Boston, Mass., engr. Bids June 26. CD 6/30, under LB.

▲ **Reichler, Inc.**, Country Club Rd., Avon, Conn. Owner Builds. $1,170,000. 39 HOUSES, "Stony Acres", Stony Corners, AVON, CONN.

▲ **Housatonic Homes**, Sentinel Hill Rd., Derby, Conn. Owner Builds. $1,090,000. 109 HOUSES, "Sentinel Hill", second section, Sentinel Hill, DERBY, CONN.

MIDDLE ATLANTIC

HEAVY CONSTRUCTION—LB & CA

▲† **C. W. Regan, Inc.**, 327 Hewes St., Brooklyn, N. Y., CA $1,932,800, tactical facilities at Lockport, Serial No. ENG-30-075-58-194, NEW YORK. U. S. Eng., 111 E. 16th St., New York 3, N. Y. Bids June 20. CD 7/2, under LB.

▲ **Fruin-Colnon Contg. Co.**, 1706 Olive St., St. Louis, Mo. and **C & C Constr. Co.**, Warren, Mich., CA $2,920,787 (Sections F & G), filtration plant and pumping station at Sturgeon Point, BUFFALO, N. Y. Erie County Water Auth., Ellicott Sq. Bldg., Buffalo, N. Y. Bids May 27. CD 6/2, under LB.

▲† **Atlantic Gulf & Pacific Co.**, 15 Park Row, New York, N. Y., CA $1,154,400, dredging Delaware River, ENG-36-109-58-109, NEW JERSEY and PENNSYLVANIA. U. S. Eng., 2635 Abbottsford Rd., Phila., Pa. CD 6/27, under LB.

▲† **Isaac DeGenaars**, 231 Greenwood Ave., Midland Park, N. J., CA $1,711,262, AN/FSC-1 Tactical Facility at Highlands, ENG-30-075-58-228, NEW JERSEY. U. S. Eng., 111 E. 16 St., New York 3, N. Y. Bids June 12. CD 6/18, under LB.

▲ **PENNSYLVANIA**—Pa. Hy. & Bridge Auth., 506 North Office Bldg., Harrisburg,

S. J. Groves & Sons Co., Box 8, East Springfield, Pa., CA $3,103,247, est. $3,200,000, 15,391 ft. divided hy., c. conc. each side, divisor, 3 bridges section Erie Thruway, Proj. 805-1 FAI, Mill Creek, Greene and Harbor Creek Twps., Erie Co. Bids May 29, awarded July 1. CD 6/3, under LB.

BUILDINGS—LB & CA

▲ **G. W. Ross Constr. Co.**, 440 Bernhardt Dr., Snyder, N. Y., CA Est. $2,553,000 (191 Homes to be built over period 5 years) first unit, 53 HOMES "Florentine Park", E. Buffalo bounded by Weiss, Griswold, Dingens and Weaver Sts., BUFFALO, N. Y. Jiggs Lewin Co., Inc., Ellicott Sq., Buffalo, N. Y. Herthe & Sonnenberger, 60 Niagara St., Buffalo, N. Y., engrs.

▲† **Bonwit Constr. Co.**, 370 Lexington Ave., New York 17, N. Y., CA $3,748,736, Capehart HOUSING at Fort Jay, Governors Island, FORT JAY, N. Y. U. S. Eng., 111 E. 16th St., New York, Zone 3, N. Y. Bids June 19. CD 6/23, under LB.

▲† **Metrig Corp.**, 2436 McDonald Ave., Brooklyn, N. Y., CA $1,084,767, 72 units Capehart HOUSING, ENG-30-075-58-297, FORT TOTTEN, N. Y. U. S. Eng., 111 E. 16 St., New York 3, N. Y. Bids June 5. CD 6/10, under LB.

▲ **Frouge Constr. Co.**, 141 North Ave., Bridgeport, Conn., CA $1,079,000, 66 units (33 bldgs.) Capehart Permanent Family HOUSING, Fort Wadsworth, Serial No. ENG-30-075-58-190, FORT WADSWORTH, N.Y. U. S. Eng., 111 E. 16th St., New York 1, N. Y. Bids May 6. CD 5/13, under LB.

▲ **C. W. C. Constr. Co.**, 56 Court St., Brooklyn 2, N.Y., CA Est. $3,917,000, HOUSING Proj.-Tibbett Towers-two 13 story buildings, Trost, Tibbett and Irwin Aves. and 231 and 232 Sts., Bronx Boro, NEW YORK, N.Y. N. Y. Teachers Hsg. Corp., c/o Tito Di Vincenzo, archt., 135 E. 65th St., New York 21, N.Y.

▲ **Michael Contg. Co., Inc.**, 135-30 39 Ave., Flushing, N. Y., CA $1,250,000, est. $1,500,000, FOOD DISTRIBUTION CENTER, York St., ELIZABETH, N. J. Wakefern Food Corp., 715 South Ave. E., Cranford, N. J. Lacy, Atherton & Davis, Hotel Stirling, Wilkes-Barre, Pa., archts. CD 5/6.

▲ **Walter Kidde Constructors, Inc.**, 140 Cedar St., New York, N.Y., CA Est. $2,500,000, HOSPITAL addns., alterations, MONTCLAIR, N.J. Mountainside Hospital, Bay and Highland Aves., Montclair, N.J., Bids Apr. 15, CD 4/11.

PROJECTS COVERED

By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterways $44,000; other public works $73,000; industrial buildings $93,000; other buildings $344,000. Also Foreign projects of $100,000 and more in size of interest to American contractors.

By Regions & Classes of Construction

(In order of Listing)

BIDS ASKED
LOW BIDDERS
CONTRACTS AWARDED

New England	**Middle West**
Middle Atlantic	**West of Mississippi**
South	**Far West**
PROPOSED WORK	
Water Supply	**Public Buildings**
Sewers, Waste Disposal	**Mass Housing**
Bridges	**Commercial Buildings**
Streets & Roads	**Industrial Buildings**
Earthwork, Waterways	**Unclassified**

In Those Stages

PROPOSED WORK: Before and including appointment of engineers or architects.
BIDS ASKED: BA (new announcements only). For full calendar, see also preceding issues.

SOON LETS CONTRACT: SLC

LOW BIDDERS: LB On jobs below $500,000 in value all low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.

CONTRACTS AWARDED: CA Except awards to low bidders previously reported in low bidder stage.

CD dates shown are of Construction Daily Issue in which last previous report was published.

OWNERS, ENGINEERS, ARCHITECTS, CONTRACTORS are invited to report their new jobs for listing in these reports when they meet or exceed the size minimums shown above. Address these news releases to J. A. Mahoney, REPORTS, ENGINEERING NEWS-RECORD, 330 W. 42 St., New York 36, N. Y.

Symbols and Abbreviations Include:

†	Federal Government
▲	Project of $1,000,000 or over.
ENR	Engineering News-Record
CD	Construction Daily

For additional reports see Construction Daily.

▲† **Wilberger Best Constr. Co.**, 2025 E. North Ave., Baltimore 13, Md., LB $1,600,803, BARRACKS, MESS HALL and ADMINISTRATION BLDG. ENG-18-020-58-35, ABERDEEN PROVING GROUNDS, MD. U. S. Eng., 24 St. and Maryland Ave., Baltimore 18, Md. Bids June 27. CD 6/23.

▲ **Dorset Contg. Co.**, 4508 Hamilton St., Hyattsville, Md., LB $1,788,000 (11 bidders), SOCIAL CENTER and DORMITORY, WASH., D.C. Catholic University, 620 Michigan Ave. N.E., Wash., D.C. Bids July 2. CD 6/20.

▲† **Norair Corp.**, 1118 22nd St., N.W., Wash., D.C., CA $1,997,500, air-conditioning main HOSPITAL, at Walter Reed Army Medical Center, ENG-49-080-58-47, WASH., D.C. U.S. Eng., 1st and Douglas Sts. N.W., Wash., D.C. Bids June 25 CD 6/27, under LB.

▲† **Jack Stone**, 1200 Jefferson Davis Hy., Arlington, Va., CA $1,093,500, modifications and addn. to ELECTRICAL DISTR. SYS., Walter Reed Army Medical Center, ENG-49-080-58-55(55), WASH., D.C. U.S. Eng., 1st and Douglas Sts. N.W., Wash., D.C. Bids June 26, CD 6/27, under LB.

SOUTH

HEAVY CONSTRUCTION—LB & CA

▲ **WEST VIRGINIA**—State Road Comn., Charleston, Zone 5, Bids opened 7/1.

W. Va.—**A. A. & D. M. Bostic & Ralph H. Burns**, Rupert, W. Va., LB $122,101, surf. treatment on H. L. b. conc. bottom course 16.588 mi. Richwood-Millpoint Rd. (W. Va. 39), Contr. No. 1, Proj. D. S. 216(5), Greenbrier and Pocahontas Counties;

W. Va.—**Andersons', Inc.**, Box 3004, Charleston, W. Va., LB $149,728, b. conc. wearing course 16.588 mi. Richwood-Millpoint Rd. (W. Va. 39), Proj. D. S. 216(5), Contr. No. 2, Greenbrier and Pocahontas Counties;

W. Va.—**Boso & Ritchie, Inc.**, Ravenswood, W. Va., LB $220,672, grading, draining 1.937 mi. Ripley Landing-Cottageville Rd. (W. Va. 44), Contr. No. 1, Proj. D. S. 663(2), Jackson Co.;

W. Va.—**Central Pennsylvania Quarry Stripping & Constr. Co.**, Hazelton, Pa., LB $1,673,276, c. conc. 2.602 mi. Interstate Rte. 81, Section 2, Proj. IN-I-81-1 (4) 20, Berkeley Co.;

W. Va.—**Harry Hatfield & Co.**, Barboursville, W. Va., LB $382,350, traf. bd. base and b. conc. surf. 0.959 mi. Peters St. to W. Va. 49 (U. S. 52), Proj. 218-A, Mingo Co.;

W. Va.—**Nello L. Teer Co.**, Durham, N. C., LB $1,770,854, grading, draining 5.552 mi. Interstate 64 Road, Proj. I-64-1(15) 30 and S. 242(13), Cabell and Putnam Counties. CD 6/23.

▲ **SOUTH CAROLINA**—State Hy. Dpt., Hotel Jefferson Columbia,

Sloan Constr. Co., Inc., P.O. Box 747, Greenville, S. C., CA $2,518,577, b. conc. surf. 8.614 mi. Int. Rte. 85 for constr. 4 lane divided hy. from Rd. 62 to Rd. 41 S.C. Docket No. 42.486 F.A. Proj. No. I-85-2 (9) (I-301-1 (10) Spartanburg Co. Bids May 13. CD 5/27, under LB.

▲ **GEORGIA**—State Hy. Dpt., 2 Capitol Sq., Atlanta, Bids opened 6/27,

Henry Newton Co., Box 428, Decatur, Ga. LB $1,149,571, underpass and approaches, Moreland and DeKalb Aves., FAP UG-037-2(4) and U 037-2 (5) Fulton and DeKalb Counties. CD 6/20.

▲ **GEORGIA**—State Hy. Dpt., 2 Capitol St., Atlanta, Bids opened 6/27,

Ga.—**Ledbetter-Johnson Co.**, Box 1067, Rome, Ga. LB $5,900,911. imprv. 10.446 mi. Atlanta-Augusta Rd. FAP 1-402-2(5) DeKalb Co.;

Ga.—**Hewitt Contg. Co.**, Box 1372 Columbus, Ga. LB $3,169,470. imprv. 2.473 mi. Atlanta Circumferential Rte., FAP 1-407-1 (5) ct 1 DeKalb Co.;

Ga.—**McIntosh Paving Co.**, 382 Trabert Ave. N.W., Atlanta, Ga. LB $486,019. imprv. 10.481 mi. Sharpsburg-Fayetteville Rd., FA Sec. Proj. S-0747 (2) Coweta and Fayette Counties. CD 6/19.

▲† **Southeastern Constr. Co.**, 1311 W. Peachtree NW., Atlanta, Ga. LB $1,134,750 support facilities U. S. Naval Air Station, NBy 16665, ATLANTA, GA. Dist. P. Wks. Office, 6th Naval Dist., Naval Base, Charleston, S. C. Bids June 26. CD 6/9.

▲ **FLORIDA**—State Rd. Dpt., Council Chamber, City Hall, Jefferson St., Pensacola,

Brown & Root, Inc., Box 3, Houston, Tex. and **T. L. James & Co., Inc.**, Box 351, Ruston, La., CA $8,136,792, 15,640 ft. bridge having two 26 ft. clear roadways, safety walks on each side, aluminum handrail and navigation and roadway lighting; removing portion of existing bridge, etc., 2.962 mi. SR 30 (US 98) bridge across Pensacola Bay, FAP Proj. No. FU-017 (2)-1, Job No. 4810-201, Escambia Co. Bids June 24, awarded July 2. CD 6/27, under LB.

▲† **American Dredging Co.**, 12 S. 12 St., Phila., Pa. CA $1,754,800, dredging new approach channel 35 ft. deep and 800 ft. wide; removal of 7,100,000 cu. yd. dirt, Pensacola Harbor, PENSACOLA, FLA. U. S. Eng., Box 1169, Mobile, Ala. Bids June 19, awarded June 27. CD 5/29.

▲ LOUISIANA—State Dpt. Hys., Hy. Office Bldg., Baton Rouge,

Austin Bridge Co., Box 1590, Dallas, Tex., CA **$1,086,404,** 2.297 mi. c. conc. pavement and vertical lift span bridge Lockport relocation, FASP 253(3), SP No. 64-06-16, Lafourche Parish. Bids May 21. CD 5/29, under LB.

▲ **Kenton County Airport Bd.,** Third and Court Sts., Covington, Ky., cancelled bids to have been opened June 25 (first section) 2,000 ft. runway extension for Greater Cincinnati Airport, COVINGTON, KY. **$1,000,000.** Will re-advertise. CD 6/6.

BUILDINGS—LB & CA

▲† **J. W. Bateson Co.,** 10130 Monroe Dr., Dallas, Tex. CA **$7,913,500.** constr. 500 units CAPEHEART HOUSING, LANGLEY AIR FORCE BASE, VA. Procurement Officer, Langley Air Force Base, Va. Bids June 17. CD 6/27, under LB.

▲ **Jones-Mahoney,** Lemon St., Tampa, Fla. LB **$1,388,526** Morton F. Plant HOSPITAL alterations, addns. CLEARWATER, FLA. West Coast Hospital Assoc., c/o Wakeling & Levison, archts., 425 S. Garden Ave., Clearwater, Fla. Bids June 17. CD 6/9.

▲† **Newell Bros. Constr. Co.,** Hope Hull, Ala., LB **$2,084,172.,** est. $1,797,604, 8 mi. railroad track, 90,000 sq. yd. bit. surf. roads and parking areas, 3 ammunition transfer platforms, etc. at Anniston Ordinance Depot, ANNISTON, ALA. U.S. Eng., P.O. Box 1169, Mobile, Ala. Bids June 23, CD 6/13.

▲† **A. C. Samford, Inc.,** Slappey Dr., Albany, Ga., CA **$4,433,492,** constr. six 3 story, two-company BARRACKS, 2 MESS HALLS, 2 ADMINISTRATION and STORAGE BLDGS., 4 MOTOR REPAIR SHOP and CENTRAL STEAM HEATING PLANT at Army Aviation Center, ENG-101-076-58-116, FORT RUCKER, ALA. U. S. Eng., 2301 Grant St., Mobile, Ala. Bids June 25. CD 6/17.

▲ **G. E. Bass & Co., Contractor,** Box 1033, Jackson, Miss., CA **$1,516,033,** 192 low-rental HOUSING UNITS, in 91 bldgs. incl. 2 MANAGEMENTS and MAINTENANCE BLDGS., Public Housing Proj., COLUMBUS, MISS. Columbus Housing Auth., City Hall, Columbus, Miss. Bids May 20. CD 6/23, under LB.

▲ **Horace B. Rickey, Inc.,** Box 520, Lafayette, La., LB **$1,263,940,** Lafayette HIGH SCHOOL addn., LAFAYETTE, LA. Lafayette Parish School Bd., Lafayette, La. Robert L. Stephan, 121 E. Main St., Lafayette, La., archt. Bids June 18. CD 4/23.

▲† **G. L. Christian & Assocs.,** 1118 American National Bank Bldg., Beaumont, Tex., CA **$4,868,778,** 300 HOUSING UNITS, Lake Charles Air Force Base, LAKE CHARLES, LA. Base Procurement Office, Lake Charles, La. Bids June 24, CD 6/27, under LB.

▲ **Pittman Constr. Co.,** Box 8116, New Orleans, La., LB **$2,059,000.** (7 bidders). West Jefferson General HOSPITAL and ACCESSORY BLDGS., incl. NUNS and NURSES RESIDENCE, etc., MARRERO, LA. Hospital Service Dist. No. 1, City Hall, Westwego, La. Bids June 25, CD 6/4.

▲ **Ralph M. Parsons Co.,** 617 So. Olive St., Los Angeles, 14, Calif., CA Est. **$6,500,000,** Glycerine PLANT, NORCO, LA. Shell Chemical Corp., 380 Madison Ave., New York 17, N.Y. Grand total $11,250,000, CD 8/28.

The Lummus Co., 385 Madison Ave., New York, N.Y., CA Est. **$3,500,000,** Acrolein PLANT production unit, (Norco, La.);

Fluor Corp., 2500 Atlantic, Los Angeles, Calif., CA Est. **$1,250,000,** off-site facilities for Warehouse-Shop addns., (Norco, La.).

▲ **Gerald Deters,** 5543 Taylor Mill Rd., Covington, Ky., LB **$1,750,000,** HOUSING, COVINGTON, KY. Covington Municipal Housing Comn., City Bldg., Covington, Ky. Joseph Herman, 334 Washington Ave., Newport, Ky., engr. CD 10/3/56.

▲ **Fred Wright Constr. Co.,** 316 12th Ave., S., Nashville, Tenn. CA **$1,300,000.** 60,000 sq. ft. HEADQUARTERS DIVINITY SCHOOL, NASHVILLE, TENN. Vanderbilt University, Nashville, Tenn. Brush, Hutchinson & Gwinn, 1717 W. End Ave., Nashville, Tenn. Awarded June 27.

MIDDLE WEST

HEAVY CONSTRUCTION—LB & CA

▲ OHIO—State Hy. Dpt., State Dpts. Bldg., Columbus, Bids opened 6/24.

O.—**J. A. Jones Constr. Co. of Charlotte, N. C.,** P. O. Box 108, Berlin Heights, O. LB **$3,546,676,** est. $3,962,300 (4 bidders) Type T-71 and structure 4.551 mi. SP 1-12.89, ACI-1103 (23), Ashtabula Co.;

O.—**C. F. Replogle Co.,** 122½ N. Court St., Circleville, O. LB **$3,910,687,** est. $4,100,000 (6 bidders) Type T-71 and structures 4.361 mi. USR 25-2.59, AC1-1101 (14), Butler Co.;

O.—**Rardin Bros. Excavating & Mining Co.,** 416 Wellington St., Akron, O. LB **$474,585,** est. $568,000 (8 bidders) Type T-35 3.262 mi. SR 164 (11.14-11.63) S, S-1263 (1), Columbiana Co.;

O.—**Arthur S. Langenderfer Inc.,** 4690 W. Bancroft St., Toledo, O. LB **$783,994,** est. $716,400 (2 bidders) Type T-35 12.271 mi. B-119. USR 24 (11.22-15.37), 0.00, DF-487 (6) Henry and Lucas Counties;

O.—**The Murray Constr. Co.,** P. O. Box 231, Waverly, O. LB **$184,554,** est. $199,400 (3 bidders) Type T-35 1.534 mi. B-119 SR 136 (1.65) (4.10) S-1248 (1), Highland Co.;

O.—**The Horvitz Co.,** 4375 E. 146 St., Cleveland, O. LB **$3,561,537,** est. $4,303,200 (8 bidders) Type T-71 and structures 3.812 mi. SR 1-16.55 ACI-1103 (27), Lake Co.;

O.—**Harold Decker, D.B.A. Kenton Wrecking Co.,** P. O. Box 1, Kenton, O. LB **$94,520,** est. $123,600 (6 bidders) Type T-35 0.792 mi. B-119 (Village of Ridgeway) and structure SR 292 (5.19-12.84) S-281 (2), Logan Co.;

O.—**Central States Constr. & New London Materials Constr. Co.,** P. O. Box 148, Wadsworth, O. LB **$416,568,** est. $457,100 (9 bidders) Type T-71 and structures 1.174 mi. USR 224-16.07, DF-458 (16), Medina Co.;

O.—**Southern Contg. Co.,** Box 1158, Chesapeake, O. LB **$498,946,** est. $500,800 (2 bidders) Type T-35 0.651 mi. (city of Portsmouth) USR 52-21.40 U-393 (5) Scioto Co.;

O.—**Kane, O'Horo & Henny, Inc.,** 65 W. Indianola Ave., Youngstown, O. LB **$224,736,** est. $232,700 (3 bidders) Type T-35 0.956 mi. B-119 and structure SR 90-7.87, Mahoning Co. CD 6/5.

▲ ILLINOIS—Dpt. P. Wks. & Bldgs., Div. Hys., Centennial Bldg., Springfield,

Ill.—**J. C. O'Connor & Sons,** 2104 Miner St., Fort Wayne, Ind., CA **$1,810,000,** c. conc., 4 span deck girder grade separation and others 3.31 mi. on FAI 6, Grundy Co.;

Ill.—**Sjostrom Paving Co.,** 1718 7 Ave., Rockford, Ill., CA **$962,436,** paving and resurf. U.S. 20 from Weldon Rd. to Day Ave., in Rockford, Winnebago Co.;

Ill.—**McDougal-Hartman Co.,** 3101 N. Adams St., Peoria, Ill., CA **$961,398,** concrete paving and deck girder bridge 7.31 mi. Ill. 29, Chillicothe to Mossville, Peoria Co. Bids June 17, awarded June 27. CD 6/24, under LB.

▲† **Eugene Luhr & Co.,** Box 48, Columbia, Ill., LB **$1,437,640,** est. $1,397,242 (5 bidders) timber piling dikes and stone fill dikes, Mississippi River, Miles 35 to 43 and 132 to 135, CIVENG-23-065-58-64, Scott and St. Genevieve Counties, Mo. and Alexander and Randolph Counties, ILL., ILLINOIS-MISSOURI. U. S. Eng., 420 Locust St., St. Louis 2, Mo. Bids June 26. CD 6/27, under Illinois.

▲ **Kil-Bar Electric Co.,** 2261 N. Claybourn Ave., Chicago, Ill., LB **$6,159,833,** street lighting sys., Spec. 80.64-58-3, CHICAGO, ILL. City, City Hall, Chicago, Ill. CD 5/2/51.

▲† **Lee Constr. Co.,** Inc., 127 N. Dearborn St., Chicago, Ill., and **Siesel Constr. Co.,** 514 Ogden Ave., Milwaukee, Wis., CA **$1,477,434,** Nike elevators addn., paving, sidewalks, SPECIAL AAA SITES C-41, C-40, C-44, C-44d, M-72, M-42, M-54, M-64, ENG-12-032-58-91, ILLINOIS-WISCONSIN. U. S. Eng., 475 Merchandise Mart, Chicago 54, Ill. Bids June 19. CD 6/5.

BUILDINGS—LB & CA

▲ **Henry Gallenstein, Jr.,** 7187 Given Rd., Indian Hill, O., Owner Builds, **$1,900,000,** 72-one floor, bsmnt., brick HOMES, Glendale-Milford Rd., CINCINNATI, O. Ayers & Graf, 527 Linton, Cincinnati, O., archts.

▲ **American Bridge Div. U. S. Steel Corp.,** 208 S. LaSalle St., Chicago, Ill., CA **$1,500,000,** 3 story, brick CHEMICAL LABORATORY, near 83 St. and Mackinaw Ave., CHICAGO, ILL. U. S. Steel Corp., 525 Wm. Penn Place, Pittsburgh, Pa. Bids 4/7. CD 4/1.

▲ **McDowell Co., Inc.,** 16226 Waterloo Rd., East Cleveland, O., CA **$5,000,000,** SINTERING PLANT, at Chicago's South Works, 3426 E. 89 St., CHICAGO, ILL. U. S. Steel Corp., Frick Bldg., Pittsburgh, Pa. CD 3/19/56.

▲ **J. J. Altman & Co.,** 2950 Illinois Ave., East St. Louis, Ill., LB **$8,090,000** (2 bidders) three 8 story and forty-eight 2 story PUBLIC HOUSING, Ill. 1-7, EAST ST. LOUIS, ILL. East St. Louis Housing Authority, 810 Spivey Bldg., East St. Louis, Ill. Alternate Plan B, three 8 story apartments, structural steel frames, LB **$4,957,710;** Phase 2, forty-eight 2 story apartments, LB **$3,189,330.** Bids June 19. CD 5/19;

Fruin-Colnon Contg. Co., 1706 Olive St., St. Louis, Mo. and **S. M. Wilson & Co.,** 1616 Cleveland Ave., Granite City, Ill., LB **$5,236,752,** Plan A, Phase 2, three 8 story apartments (East St. Louis, Ill.).

▲ **Stone & Webster Engineering Corp.,** 90 Broad St., New York, N. Y., CA Est. Approx. **$11,000,000,** design and construct 50,000 kw. power generating PLANT exten. designated as Unit No. 4 of Sabrooke Station, ROCKFORD, ILL. Central Illinois Electric & Gas Co., 303 Main St., Rockford, Ill.

WEST OF MISSISSIPPI

HEAVY CONSTRUCTION—BA

▲† **Wyo., Cheyenne**—DIESEL ENGINE GENERATORS—BA 8/7—U. S. Eng., 1709 Jackson St., Omaha 2, Neb., furnishing 6 diesel engine generators 1600-1700 kw, (installation by others), Squadron 1 F. E., Warren Air Force Base, ENG-25-066-59-4, $1,375,000-$2,250,000, CD 1/6.

BUILDINGS—SLC

▲ **Minn., Faribault**—HOSPITAL—St. Lucas Hospital, soon lets contract 3 story, bsmnt., 90 x 110 ft. hospital. $1,000,000. Magney, Tusler & Setter, 303 Roanoke Bldg., Minneapolis, archts. CD 9/25/47.

HEAVY CONSTRUCTION—LB & CA

▲ **Orfei & Mariani,** 1156 Homer St., St. Paul, Minn., CA **$1,054,335,** Proj. No. 1, Sanitary Sewer Imprvt. No. 2, ROSEVILLE (P. O. St. Paul), MINN. Village, Roseville, Minn. Bids June 30. CD 6/12.

▲ MISSOURI—State Hy. Comn., **Jefferson City, Bids** opened 6/26,

Mo.—**Fred Weber Cont. Inc.,** 7929 Alabama Ave., St. Louis, Mo., LB **$1,843,997** (6 bidders), graded earth, culverts and two-36 ft. c. conc. pavement 1.1332 mi. St. Louis City;

Mo.—**Porter-DeWitt Constr. Co.,** P. O. Box 279, Poplar Bluff, Mo., LB **$1,040,670** (6 bidders), graded earth, culverts 24 ft. b. conc. 5.869 mi., Douglas Co.;

Mo.—**M. E. Gillioz,** Monett, Mo., LB **$369,666** (6 bidders), graded earth, culverts and 24 ft. b. conc. 2.837 mi., Douglas Co.;

Mo.—**O'Dell & Riney Constr. Co., Inc.,** 310 S. Filmore, P. O. Box 3775, Kirkwood 22, Mo., LB **$408,140** (6 bidders), graded earth, culverts, b. conc. 24 ft. wide, 3.392 mi. Wright Co.;

Mo.—**Grosshans & Petersen, Inc.** and **Perry McGlone Constr. Co.,** 12704 W. 95th, Kansas City, Mo., LB **$505,811** (10 bidders), graded earth, culverts 3.835 mi., Platte Co.;

Mo.—**J. A. Tobin Constr. Co.,** 3701 Rainbow Blvd., Kansas City, Kan., LB **$924,864** (7 bidders), graded earth, 24 ft. concrete pavement 6.955 mi., Johnson Co.;

Mo.—**Arthur E. Quinn Contr.,** Salisbury, Mo., LB **$74,756** (3 bidders), graded earth, culverts, oiled earth surf., Atchison Co.;

Mo.—**Jos. L. Pohl Contr.,** Nevada, Mo., LB **$92,539** (4 bidders), graded earth, culverts, gran. surf. 6.369 mi., Daviess Co.;

Mo.—**Bridges Paving Co.,** 1337 S. Kingshighway Blvd., St. Louis, Mo., LB **$88,956** (5 bidders), widen and 24 ft. b. concrete 1.932 mi. Pike Co.

Mo.—**Trinidad Asphalt Mfg. Co. & Quarry Realty Co.,** 4030 Chauteau Ave., St. Lowis 10, Mo., LB **$274,490** (5 bidders) widen and 24 ft. b. conc. pavement 6.65 mi., Pike Co. CD 6/12.

▲ **Jud Plumbing & Heating Co., Inc.,** Box 5143, Beacon Hill Station, San Antonio 1, Tex. LB **$1,138,000,** air-conditioning and imprv. existing courthouse and Postoffice bldg., SAN ANTONIO, TEX. General Services Admin., PBS., Reb. 7. 1114 Commerce St., Dallas, Tex. Bids June 19. CD 5/27.

▲† **Cage Bros.** 6959 San Pedro, San Antonio, Tex. CA **$1,192,689,** constr. R/W primary instrument at Connally Air Force Base, ENG-41-443-58-74 WACO, TEX. U.S. Eng., Box 1600, Fort Worth, Tex. Bids June 24, CD 6/26, under LB.

BUILDINGS—LB & CA

▲ **J. W. Bateson Co., Inc.,** P.O. Box 13307 Walnut Hill Station, Dalla, Tex., CA **$3,738,500,** 235 HOMES for personnel at Air Base, SIOUX CITY, IOWA, Sioux City Air Base, Sioux City, Iowa. Bids June 10. CD 6/20, under LB.

▲† **Maggie Constr. Co. and McCoy Plumbing & Heating Co.,** Box 246, Rolla, Mo. (joint venture) CA **$4,241,522,** est. $4,730,000 ENLISTED MEN'S BATTALIONS, ENG-23-028-58-75, FORT LEONARD WOOD, MO. U. S. Eng., 1800 Federal Office Bldg., Kansas City 6, Mo. Bids June 25. CD 6/30, under LB.

▲ **Kaiser-Glick, Inc.,** 9630 Olive St. Rd., Olivette, 24, Mo., Owner Builds, Over **$1,000,000,** 100 RESIDENCES (Third Section) Indian Meadows Sub-division, OLIVETTE (St. Louis 24 P.O.), Mo.

▲ **I. E. Millstone Constr. Co.,** 8510 Eager Rd., Brentwood 17, Mo., CA **$1,697,000,** two 4 story, 61 x 129 ft. men's and women's RESIDENCE HALLS, east of Big Bend Blvd. between Wydown and Forsyth Blvds., Proj. No. Mo. 23 CH-38(D), ST. LOUIS, MO. Washington University, Skinker at Lindell Blvd., St. Louis 5, Mo. Bids June 13. CD 6/26, under LB.

▲ **Arthur Fischman Realty Co.,** 820 Chestnut St., St. Louis 1, Mo., Owner Builds, Over **$3,000,000,** Bellwood SHOPPING CENTER, Chambers-Florissant Rds., ST. LOUIS COUNTY, MO. Rathert & Roth, 4401 Hampton Ave., St. Louis 9, Mo., archts.

▲† **Progressive Contractors, Inc.,** 1235 Sierra Alta St., Los Angeles, Calif. CA **$12,072,000.** 744 units Capehart HOUSING, Grand Forks Air Force Base, GRAND FORKS, N.D. Procurement Officer, Grand Forks Air Force Base, Grand Forks, N.D. Bids June 12. CD 6/23, under LB.

▲† **Martin K. Eby,** 610 N. Main, Wichita, Kan. CA **$1,666,431** (3 bidders) 1 story ADMINISTRATION and STORAGE BLDG., 1 story CONSOLIDATED MESS; two 3 story ENLISTED MEN'S BARRACKS, parking, roads, utilities, ENG-23-028-58-79, FORT RILEY, KAN. U. S. Eng., 1800 Federal Office Bldg., Kansas City 6, Mo. Bids June 25. CD 6/30, under LB.

▲ **J. F. White Engineering Corp.,** 4390 South Santa Fe Dr., P. O. Box 144, Englewood, Colo., CA Est. **$3,000,000,** design and constr. 16,500 dw. POWER PLANT addn., HURLEY, N. M., Kennecott Copper Corp., Chino Mines Div., 161 E. 42 St., New York, N. Y.

▲† **Robertson Constr. Co.,** 4015 W. Jefferson Blvd., Los Angeles, Calif. CA **$8,204,229.** 500 Capehart FAMILY HOUSING UNITS, ENG-41-443-58-65, FORT HOOD, TEX. U. S. Eng., Box 1600, Fort Worth, Tex. Bids June 17, awarded June 30. CD 6/19, under LB.

▲ **LeBlanc Inc.,** Box 3175, Port Arthur, Tex. CA **$1,053,447,** JUNIOR HIGH SCHOOL, Groves, PORT NECHES, TEX. Groves Ind. School Dist., D. T. Carver, supt., 1000 Merriman St., Port Neches, Tex. Bids June 25. CD 6/3.

▲† **H. B. Zachry Co.,** P. O. Box 10188, San Antonio, Tex. CA **$7,533,228.** 500 units Capehart HOUSING. Sheppard Air Force Base, ENG-41-612-58-72, WICHITA FALLS, TEX. Procurement Officer, Sheppard Air Force Base, Wichita Falls, Tex. Bids June 17. CD 6/20, under LB.

▲† **Robert E. McKee, General Contr. Inc.,** Drawer 562. El Paso, Tex., LB **$1,198,500,** est. $500,000-$1,000,000, 81,000 sq. ft. EM Barracks BN ADMINISTRATION and SUPPLY BLDG., White Sands Proving Grounds, Inv. ENG-29-005-58-114, LAS

(Continued on page 92)

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(Continued from page 90)

CRUCES, N. M. U. S. Eng., Box 1538, Albuquerque, N. M. Bids June 24. CD 6/6.

FAR WEST

HEAVY CONSTRUCTION—BA

▲ **Calif., Sacramento**—BA 7/30—Sacramento Municipal Utility Dist., 1708 59th St., ice house dam, rock-fill impervious core type with crest length of 1,500 ft. dikes and access roads, Upper American River Proj., El Dorado Co. Inv. 2202. CD 1/8.

BUILDINGS—BA

▲ **Calif., Pasadena**—SCHOOL—BA 8/5—Pasadena Bd. Educ., 351 S. Hudson St., high school, 2925 Sierra Madre Blvd. $4,000,000. CD 4/9.

▲ **Calif., San Luis Obispo**—PHYSICAL EDUCATION—BA 8/6—State Div. Architecture, 1100 S. Grand Ave., Los Angeles, about 70,250 sq. ft. men's physical education bldg. and outdoor physical education facilities at California State Polytechnic College. W.O. 4405GC-25 $1,521,000. Plans deposit $75. (Correction—Bid Date). CD 7/3.

HEAVY CONSTRUCTION—LB & CA

▲† **Vinnell Steel Co.**, Irwindale, Calif., CA **$3,778,000**, f.o.b. Glen Canyon Dam Site, furnishing eight 15 ft. diam. steel penstocks averaging about 670 ft. long and four 8 ft. diam. steel outlet pipes averaging about 80 ft. long (total est. weight 19,450 lbs.) for Glen Canyon Dam, Colorado River Storage Proj., Inv. No. DS 5052, ARIZONA. Bureau Reclamation, Dpt. Interior, Denver Federal Center, Denver, Colo. Bids June 17. CD 6/24, under LB.

▲† **J. G. Shotwell**, 5908 Southeast 20th Ave., Mercer Island, Wash. CA **$2,508,000**. f.o.b. Glen Canyon Dam Site, 220,000 tons bulk pozzolan for Glen Canyon Dam and power plant, Colorado River Storage Proj., Spec. DS 5053 ARIZONA. Bureau Reclamation, Dpt. Interior, Denver Federal Center, Denver, Colo. Bids June 19. CD 6/26, under LB.

▲† **R. A. Heintz Constr. Co.**, 211 NE Columbia Blvd., Portland, Ore. CA **$2,635,493**. Spec. DC 5044, enlargement of Emigrant Dam, Rouge River Proj., Ashland, OREGON. Bureau Reclamation, Dpt. Interior, P.O. Box 386, Camp White, Ore. Bids June 3. CD 6/9, under LB.

▲ **CALIFORNIA**—State Div. Hys., 1120 N. St., Sacramento, Bids opened 7/2,

Guy F. Atkinson Co., 10 W. Orange Ave., South San Francisco, Calif. LB **$1,647,722** (11 bidders) grading, surf. 1.2 mi. 4 lane freeway south of Healdsburg, clearing and rough grading, addnl. 3.7 mi. of future freeway Rte. to north and constr. Russian River Bridge 704 ft: long and west Slough Bridge. IV-Son-1B, Sonoma Co. ~~CD 6~~/6.

▲ **CALIFORNIA**—State Div. Hys., 120 S. Spring St., Los Angeles,

E. L. Yeager Co., E. L. Yeager Constr. Co., Inc., 1995 Agua Mansa Rd., Riverside, Bert C. Altfillisch, Altfillisch Co. and Lowe & Watson, 750 N. Baldwin Park Blvd., Baldwin Park, Calif. (joint venture) CA **$3,759,042**. grading, surf. 4.3 mi. 4 lane divided freeway and 11 structures between Riverside Co. line and San Bernardino Freeway, US 70-99 near Colton, V111-Riv.-SBD-43, C.F. Riverside and San Bernardino Counties. Bids June 19. CD 6/24, under LB.

▲† **South West Welding & Mfg.**, 3201 W. Mission Rd., Alhambra, Calif. CA **$2,313,953**. furnishing one 16 ft. diam. steel penstock with branch outlet pipes est weight 6,800,000 lbs. for Trinity Dam, Central Valley Proj., Inv. DS 5049, CALIFORNIA. Bureau Reclamation, Dpt. Interior, Denver Federal Center, Denver, Colo. Bids June 5. CD 6/11, under LB.

▲† **Standard Dredging Co.**, 108 W. 6th St., Los Angeles, Calif. CA **$1,038,839**, est. $1,000,000, dredging and revetment of San Diego River and Mission Bay, San Diego Co. ENG-04-353-58-29, CALIFORNIA. U. S. Eng., 751 S. Figueroa St., Los Angeles, Calif. Bids June 19. CD 6/23, under LB.

▲ **Winston Bros. Co.**, 132 California Ave., Monrovia, Calif. LB **$4,614,406** (9 bidders) constr. 2nd San Diego Aqueduct and Colorado River Aqueduct Canal and siphons, Spec. 554, LOS ANGELES, CALIF. Metropolitan Water Dist. of Southern California, 306 W. 3 St., Los Angeles, Calif. Bids July 1. CD 6/11.

▲† **Gordon H. Ball and Ball & Simpson**, 685 Delaware St., Berkeley, Calif. CA **$2,723,500**, est. $4,000,000 (joint venture) extend Runway 12-30, widening and exten. runway and taxiway at San Nicholas Island Naval Air Missile Test Center, Spec. 11692-57, POINT MUGU, CALIF. Eleventh Naval Dist., 1220 Pacific Hy., San Diego, Calif. Bids June 16. CD 6/19, under LB.

BUILDINGS—LB & CA

▲ **Ross B. Hammond Co.**, Box 2111, Portland 14, Ore. CA **$6,043,142**. 1st phase, Dammasch General MENTAL HOSPITAL, near Wilsonville, Clackamas Co., PORTLAND, ORE. State Bd. Control Salem. Bids June 17, awarded June 27. CD 6/20, under LB.

▲ **L. E. Dixon Co.**, 409 South California St., San Gabriel, Calif. LB **$5,452,000**. (5 bidders) 6 story rein.-con. Long Beach COUNTY BLDG., Spec. 1784-G, LONG BEACH, CALIF. Los Angeles Co., 501 Hall of Records, Los Angeles, Calif. Bids July 2. CD 4/25.

▲ **Steed Bros.**, 714 Date Ave., Alhambra, Calif. CA **$1,641,900** general constr. four 3 story rein.-con. brick masonry and concrete RESIDENCE HALLS at Kellogg-Voorhis Campus, California State Polytechnic College, POMONA, CALIF. State Div. Architecture, 1100 S. Grand St., Los Angeles, Calif. Bids June 11, awarded July 2. CD 6/16, under LB.

▲† **M. H. Golden Co.**, 3485 Noell St., San Diego, Calif. CA **$1,110,000**. constr. 3 story, 360 ft. long BACHELOR OFFICERS' QUARTERS, Naval Training Center, Spec. 11677-57, SAN DIEGO, CALIF. Eleventh Naval Dist., 1220 Pacific Hy., San Diego, Calif. Bids June 16, awarded June 26. CD 6/19, under LB.

▲ **Cahill Constr. Co.**, 350 Sansome St., San Francisco, Calif. CA **$2,500,000**. 300 room AIRPORT HOTEL at San Francisco Airport, SAN FRANCISCO, CALIF. City, City Hall, San Francisco, Calif. The Hilton Hotels, lessee. William B. Tabler, 401 7th Ave., New York, N. Y., archt. CD 1/11/57, under Calif., Commercial Bldgs., South San Francisco, and Airport Hotels, as owner.

▲ **Paul W. Speers**, 25 Cahuenga Blvd., Los Angeles, Calif. LB **$1,945,736** (3 bidders) constr. 3rd increment at South HIGH SCHOOL, TORRANCE, CALIF. Torrance Unif. School Dist., Torrance, Calif. Bids July 3. CD 6/11.

PUERTO RICO

HEAVY CONSTRUCTION—LB & CA

▲† **Nolla, Galib & CIA**, Box 2423, San Juan, Puerto Rico, LB **$3,241,400**, aircraft maintenance hangar and enlisted men's barracks at Naval Station, NBy-10132, ROOSEVELT ROADS, P. R. Area P. Wks. Office, Caribbean, Naval Station, San Juan, P. R. Bids June 19. CD 6/18.

U. S. POSSESSIONS

BUILDINGS—LB & CA

▲ **Empire Gas Eng. Co.**, 247 S. Dixie Hy., Miami, Fla., CA **$1,135,700**, (a) 1 story rein.-con., 2 parallel side structures COMMISSARY STAR, also site work (b) 2 story BOQ and Mess, rein.-con. cast in place; offset wing site development, parking areas, roads, NBy 3397, MARIANAS ISLANDS, GUAM. Bureau Yards & Docks, c/o Area P. Wks. Office, Marianas Islands, Guam.

PROPOSED PROJECTS

WATER SUPPLY

▲ **Mo., Columbia**—City, Water & Light Dpt., 104 Municipal Bldg., Columbia, water works sys. incl. 3 deep wells, appurtenances, river intake and treatment plant, mains, etc. $5,813,500. Lutz & May, 819 Finance Bldg., Kansas City, Mo., consult. engrs.

▲ **O., Dayton**—City and Montgomery Co., Courthouse, 48-in. water main, 2 m.g. elev. water tank; 30-in. main, and 1 million gal. elevated water tank, $2,709,000. Pitometer Associates, 50 Church St., New York N. Y., consult. engrs. CD 8/9/45.

▲ **O., Lima**—City, City Hall, reservoir in Bath Twp., $1,900,000. Bids soon, Buck, Seifert & Jost, 112 E. 19 St., New York, N. Y., consult. engrs. CD 11/13/56.

SEWERS, WASTE DISPOSAL

▲ **Ind., Hammond**—Sanitary Dist. of Hammond, 5143 Columbia Ave., 4 pumping stations, relief and trunk sewers, $2,148,895, Consoer, Townsend & Assocs., 360 E. Grand Ave., Chicago 11, Ill., consult. engrs. CD 5/9.

STREETS AND ROADS

▲ **PENNSYLVANIA**—Pa. Hys. Dpt., 506 North Office Bldg., Harrisburg,

Cambria Co.—reconstr. L.R. 1022 between south of Geistown and Johnstown 4.9 mi. **$3,400,000**. Gwin Engineers, Inc., 1200 12th Ave., Altoona, Pa., consult. engrs. R. A. Farley, ch. engr., c/o owner.,

▲ **SOUTH DAKOTA**—State Dpt. Hys., H. C. Remger, state hy. engr., Pierre,

Pennington Co.—4 lane divided hy. route with 4 interchanges paralleling U. S. Hys. 14 and 16, beginning about 16 mi. east of Rapid City at point 2 mi. west of New Underwood and continues to 4 mi. east of Wicksville, FAI, $7,000,000. Kirkham, Michael & Assocs. 618½ St. Joe, Rapid City, engrs. Staven Engineering Co., 1717 W. St. Joe, Rapid City, and Scott Engineering Co., Watertown, associated consultants. CD 2/12.

PUBLIC BUILDINGS

▲ **Ala., Mobile**—SCHOOLS—Mobile Co. Bd. of Educ., Court House, elementary school, Central High School addns. $2,000,000. CD 11/11/52.

▲ **Calif., Santa Ana**—ACUTE DISEASE HOSPITAL—Bd. Supervs. Orange Co., Courthouse, plans by William I. Faulkner, Spurgeon Bldg., 6 story 360-bed, 150,000 sq. ft. Type I constr. acute disease hospital. $4,500,000. CD 11/26/56.

▲ **Colo., Lakewood**—SCHOOLS—School Dist. R-1, Jefferson Co., 1580 Yarrow, plans by Wheeler & Lewis, 2215 W. 32 St., Denver, Alameda Senior High School, S. Wadsworth between Mississippi and Arkansas Sts., $2,225,000, Arveda High School addn., 57th and Balsam Sts., $350,000, plans by Musick & Musick, 1000 Patterson Bldg., Denver, Fremont-Fruitdale and Arvada Junior High School, 52nd and Ward Rd., $1,125,000, plans by Harold K. Carver, 5711 Webster St., Arvada, Northwest Arvada Elementary School, W. 62nd and Garrison, $570,000. CD 6/3.

▲ **Conn., Hartford**—MEDICAL-DENTAL SCHOOL—State P. Wks. Dept., 165 Capitol Ave., medical-dental school at the University of Conn., $7,000,000. CD 1/31/57.

▲† **Idaho, Arco**—POWER PLANT, etc.—Atomic Energy Comn., Idaho Operations Office, Idaho Falls, power plant and cooling tower completing reactor bldg., Experimental Breeder Reactor-II facility, National Reactor Testing Station, $3,000,000. Bids to be called next month. CD 5/8/56.

▲ **Idaho, Boise**—OFFICE—State Hy. Dpt., Boise, plans by Hummel, Hummel & Jones, and Wayland & Cline, 1324 Idaho St., office for Highway and Law Enforcement Dpts., $1,750,000-$2,250,000.

▲ **Ky., Lexington**—CENTER—University of Ky., 163 E. Short St., plans by Meriwether Maryе & Assocs., 248 E. Short St., Center, incl. kitchen, dining unit and dining facilities for 1,200 students. $1,200,000.

▲† **La., Bossier City**—HOUSING—Base Procurement Officer, Bossier Base, plans by Van & Flaxman, Ward Bldg., Shreveport, 200-unit Capehart housing, at Bossier Base, $3,300,000.

▲ **Mass., Clinton**—SCHOOL—Town, School Dpt. Preliminary plans nearly completed by L. W. Briggs Assocs., Inc., 90 Park Ave., Worcester, high school between S. Main St. and Rte. No. 110, $1,450,000. CD 12/30.

▲ **Mass., Georgetown**—SCHOOL—Georgetown, Rowley & Ipswich Regional School Dist., 30 Summer St., plans by S. W. Haynes & Associates, Inc., 336 Main St., Fitchburg, school, $2,000,000. Constr. 1959. CD 2/25/57.

▲ **Mich., Lapeer**—SCHOOL—Bd. Educ., Lapeer P. Schools, voted bonds June 9, high school and two elementary schools. $1,700,000. CD 4/18.

▲ **Okla., Stillwater**—POWER PLANT—City, City Hall, voted bonds June 24, electric power plant extens. $2,150,000. C. H. Guernsey & Co., 2700 North Oklahoma City, consult. engrs. CD 6/12.

▲ **Tenn., Fulton**—PLANT, etc.—City, City Hall, plans by Thomas F. Faires & Assocs., Falls Bldg., Memphis, 255,000 sq. ft. plant and hdqrs. $1,000,000. Ferry-Morse Seed Co. lessee.

▲ **Wis., Milwaukee**—MUSIC HALL—Milwaukee Co. music hall in Juneau Park, $3,500,000, E. A. Howard, c/o owner; engr.

COMMERCIAL BUILDINGS

▲ **Colo., Littleton**—SHOPPING CENTER—Jack Wagenblast, 2141 S. Broadway, plans by John Milan, 9200 W. Colfax St., Denver, approx. 120,000 sq. ft. shopping center, 8,000 or 9,000 car parking lot. $1,000,000.

▲ **Colo., Sterling**—HOSPITAL—St. Benedict's Hospital, Sterling, plans by Linder, Wright & White, Insurance Bldg., Denver, 2 story hospital addn. $1,250,000.

▲ **Conn., West Haven**—SHOPPING CENTER—Henry A. Porter, 130 Marvelwood Dr., New Haven, 125,000 sq. ft. shopping center. $1,250,000.

▲ **La., Baton Rouge**—DORMITORY—Southern University & A & M College, Southern Branch, Proj. La. 16 CH-22-D, women's dormitory and family faculty. $1,900,000.

▲ **Mich., Flint**—HOSPITAL—Flint Osteopathic Hospital, 416 W. Fourth Ave., plans by Smith, Hinchman & Grylls Associates, Inc., 3107 W. Grand Blvd., Detroit, osteopathic hospital, Beacher Rd. and S. Ballenger Hy. $3,500,000. CD 4/11/57.

▲ **Miss., Lumberton**—CHURCH—Seventh Day Adventists, Lumberton, church. $1,000,000.

▲ **Mo., Kansas City**—DORMITORY—Trinity Lutheran Hospital, 31st and Wyandotte Sts., Proj. Mo. 23-CH 48 H, women's dormitory for hospital. $1,000,000.

▲ **N. J., Jersey City**—OFFICE—Bettinger Assocs. & Terminal Enterprises, 5 Journal Sq., 20 story office, Sites Nos. 1 to 7, Journal Square. $3,000,000.

▲ **Ore., Milwaukee**—HOSPITAL—Methodist Home, Inc., 12601 S.E. River Rd., 300-bed hospital. $2,500,000.

▲ **Tex., Dallas**—HOSPITAL—Doctors Hospital Foundation Inc., c/o Jerry R. Hanna, 11709 Lochwood, hospital, 9323 Garland Rd. $1,000,000.

▲ **Tex., Galveston**—HOME FOR AGED—Moody Foundation, 2028 Market St., Home for the Aged, 31.28 acres site Old Fort Crockett. $3,000,000. CD 6/30/55.

▲ **Ont., Ottawa**—BUS DEPOT—Ottawa Transportation Comn., 56 Sparks St., central bus depot in south end of City, $1,500,000.

▲ **Que., Hull**—COMMERCIAL CENTRE—Business Syndicate, c/o L. J. Gregoire & Co., 112 Principale St., plans by Issalys, 112 Main St., 19,000 sq. ft. commercial centre, Main St. $1,000,000. Bids end of August.

▲ **Que., Quebec City**—APARTMENT—Chateau St. Louis Quebec Apartments Ltd., 135 Grande Alle West, plans by Andre Tessier & Fred A. Walker, 1075 Vincent Massey St., 12 story apartment, 135 Grande Alle West, $1,500,000. Ian-Martin & Victor Prus, 4693 Sherbrooke St. W., Montreal, staff engrs.

INDUSTRIAL BUILDINGS

▲ **Alta., Cressford**—PLANT—Hudson Bay Oil & Gas Co. Ltd., 320 7th Ave. W., Calgary, Alta. and Canadian Delhi Oil., Calgary, Alta., gas refrigeration plant, Cressford area, $1,000,000.

UNCLASSIFIED

▲ **Tex., Houston**—STADIUM, etc.—Harris County Park Comn., Harris County, c/o Courthouse, revenue bond election July 26 stadium, $6,000,000; coliseum (fat stock show) $6,000,000; hard-paved parking area, $3,000,000; exposition and livestock facilities $2,000,000; utilities $2,000,000. CD 2/14.

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Close-up of Crushing Unit showing Telsmith Vibro-King Scalper, 13-B Gyratory Breaker, and 48-FC Gyrasphere Secondary Crusher.

G-30

Airview of complete operation by Photographic Survey Corp. Ltd.

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NEW ENGLAND

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

STREETS AND ROADS

July 16 Maine July 28 Connecticut

BUILDINGS—BA

▲ **Conn., Bristol** — SCHOOL — BA 7/31 — Town, Bldg. Comn., Memorial Dr., high school, King St. $3,000,000. Plans deposit $100. Lyons & Mather, 211 State St., Bridgeport, archts. John P. Legnos, 30 Gillett St., Hartford, engr. CD 12/4.

HEAVY CONSTRUCTION—LB & CA

▲ **CONNECTICUT**—State Hy. Dpt., State Office Bldg., Rm. 527, Hartford,

Conn.—**Enfield Road Constr. Co., Inc.**, Depot Hill, Warehouse Point, Conn. and **E. T. O'Neill & Sons Constr. Corp.**, 223 Commerce St., Holyoke, Mass., LB **$1,732,513** (10 bidders), approx. 11,074 lin. ft. hot b. conc. pavement relocation Rte. 9, incl. 2 grade separation structures and rein.-con. box culvert at Griffin Brook. Proj. 11-72. Bloomfield and Simsbury;

Conn.—**D. Arrigoni**, 605 Main St., Middletown, Conn., LB **$1,460,570** (7 bidders), approx. 7,948 lin. ft. c. conc. pavement Waterbury Expressway from Hamilton Ave. to Scott Rd. incl. 4 bridges, 1 pedestrian bridge, 1 pedestrian underpass and two rein.-con. box culverts, Proj. 182-20, Waterbury. CD 6/19.

BUILDINGS—LB & CA

▲ **Ellis A. Tarlton**, 34 Pleasant St., Danbury, Conn. Owner Builds. **$3,500,000.** 100 HOUSES "Hoyt's Hill Estates" Hoyt's Hill, Roads, BETHEL, CONN.

▲ **W. J. Megin, Inc.**, 51 Elm St., Naugatuck, Conn. CA Approx. **$3,000,000.** PAPER PLANT addn., Pickett Rd., NEW MILFORD, CONN. Kimberly-Clark Corp., 128 N. Commercial St., Nennah, Conn. Awarded July 1. CD 5/2.

▲ **Fusco-Amatruda Co.**, 59 Amity Rd., New Haven, Conn., LB **$1,934,000** (6 bidders), 2 story, 128,000 sq. ft. steel frame, cinder block, brick facing, etc. HIGH SCHOOL, Rubber Ave., NAUGATUCK, CONN. Town, Town Hall, Naugatuck, Conn. Bids June 30. CD 6/12.

▲ **Leonard Litwin**, 1200 Union Turnpike, New Hyde Park, New York. Owner Builds. **$2,447,760.** 11 story 218 family APARTMENT, Strawberry Hill Ave., STAMFORD, CONN. Philip Birnbaum, 12 E. 48 St., New York, N. Y., archt. CD 12/4.

MIDDLE ATLANTIC

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

BRIDGES

July 24 Pennsylvania July 28, 29 New Jersey

STREETS AND ROADS

July 24, 29 New Jersey July 24, 25 Pennsylvania

August 7 New York

BUILDINGS—BA

▲ **N. J., Newark**—HOSPITAL—BA About 8/1—Bd. Trustees, St. James Hospital, 142 Elm St., hospital. $3,000,000. Anthony De Pace, 151 W. 46 St., New York, N. Y., archt. CD 1/21/57.

HEAVY CONSTRUCTION—LB & CA

▲ **Tufano Constr. Corp. & O. E. Contg. Co.**, 32-17 Lawrence St., Flushing, N. Y. CA **$6,046,969**, paving and utilities for Runway "V" and Inland Taxiways at New York International Airport, Contr. NYA-920.003, IDLEWILD, N. Y. Port of New York Authority, 111 8th Ave., New York 11, N. Y. Bids June 24. CD 7/1, under LB.

▲ **MARYLAND**—State Rds. Comn., 108 E. Lexington St., Baltimore 2, Bids opened 7/1,

Md.—**John H. Ensey**, 1619 Ridgely St., Baltimore 30, Md. LB **$1,882,858** (5 bidders), grading, drainage, surf. 2.49 mi. new Columbia Pike and 1.229 mi. Md. 320 and US 29 near Burnt Mills. M 531-3-320 Montgomery Co.;

Md.—**T. Edgie Russell**, Frederick, Md. LB **$690,613** (10 bidders) grading, drainage, surf. new southbound lane US-301 from Potomac River bridge 5.312 mi. north from Potomac River, CH 257-20-250, Charles Co. CD 6/23.

▲ **Morauer & Hartzell, Inc.**, 1620 2nd St., S.W., Wash., D. C., CA **$1,786,286** (3 bidders) grading Anacostia Freeway, East Capital St. to Pennsylvania Ave., FAP No. 1-05-1 (6), WASH., D. C. D. C. Govt., Dpt. Hys., Rm. 404, 499 Pennsylvania Ave. N.W., Wash. 1, D. C. Bids July 23. CD 5/27.

BUILDINGS—LB & CA

▲ **Caristo Constr. Corp.**, 26 Court St., Brooklyn 2, N.Y., LB **$1,534,000** (7 bidders), general constr., plumbing, and drainage, heating and ventilating, electrical work and lighting fixtures for PUBLIC SCHOOL 299, Evergreen Ave. between Woodbine and Madison Sts., Brooklyn Boro, BROOKLYN, N.Y. Bureau Constr. Bd. Educ., 42-15 Crescent St., Long Island City, N.Y. Bids June 24. CD 6/24.

▲ **William R. Buxbaum**, c/o Sylvan Bien, archt., 36 W. 46 St., New York, Zone 19, N. Y., Owner Builds. **$2,000,000**, 19 story APARTMENT, 900 Fifth Ave. near West 71 St., NEW YORK, N. Y. CD 4/9.

▲ **Howard A. Fox, D. B. A., Foxwood Homes, Inc.**, Rte. 35, Hazlet, N. J., Own Forces, **$5,000,000**, 300 HOMES, 1st section of new development, Ely St., Holmdel village, HOLMDEL, N. J., H. Tannenbaum, 205 E. 43rd St., New York, N. Y., archt.

▲† **Wilberger Best Constr. Co.**, 2025 E. North Ave., Baltimore 13, Md., CA **$1,600,883**, BARRACKS, ADMINISTRATION BLDG. and MESS, ENG-18-020-58-35, ABERDEEN PROVING GROUNDS, MD. U.S. Eng., 24 St. and Maryland Ave., Baltimore 18, Md. Bids June 27. CD 7/8, under LB.

▲† **Irons & Reynolds, Inc.**, 1724 H St. N. W., Wash., D. C., CA **$3,958,840**, brick faced, concrete, air-conditioned incl. central heating plant, 150-bed HOSPITAL, ENG-18-020-58-17, FORT GEORGE G. MEADE, MD. U. S. Eng., 24 St. and Maryland Ave., Baltimore 18, Md. Bids June 17. CD 6/20, under LB.

▲ **John Tester & Son**, Clinton, Md., CA **$1,768,435**, HIGH SCHOOL, Oxon Hill, MARLBORO, MD. Prince George's Bd. Educ., Marlboro, Md. Bids June 26. CD 7/1, under LB.

▲ **Standard Constr. Co.**, 1010 Vermont Ave., N.W., Wash., D.C., CA **$2,030,470**, constr. HOUSING Proj. DC-124, Syphax Gardens, between O and P Sts., and Half and Second Sts. S.W., WASH., D.C. National Capitol Housing Auth., 1729 New York Ave. N.W., Wash., D.C. Bids May 29, awarded June 30. CD 6/4, under LB.

SOUTH

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

BRIDGES

July 23 Louisiana July 25 Tennessee, Virginia

STREETS AND ROADS

July 23 Louisiana July 25 Kentucky, Tennessee

July 25 Virginia

BUILDINGS—BA

▲ **Ky., St. Matthews** — RETAIL STORE — BA 7/29 — Sears Roebuck & Co., S. State and Van Buren, Chicago, Ill., 2 story, approx. 120,000 sq. ft. branch retail store. $1,500,000. Dunlap & Esgar, 333 N. Michigan Ave., Chicago, Ill., archts. CD 4/29, under LB.

HEAVY CONSTRUCTION—LB & CA

NORTH CAROLINA—State Hy. Comn., Raleigh. Bids opened July 1,

N. C.—**William Muirhead Constr. Co., Inc.**, Box 2012, Durham, N. C. **$2,072,514**, est. over $500,000 grading, structures 5 mi. U. S. 70 addnl. lane from west end Durham by-pass east to Junction U. S. 15, Proj. 8.14107, I-85-4 (10) 171, Durham Co.;

N. C.—**Wright Contg. Co.**, Brookhaven Rd., Columbus, Ga., LB **$1,112,913**, est. exceeds $500,000, SABC, c. conc. and structures 1.97 mi. Cherry and Marshall Sts. in Winston-Salem, Proj. 8.28305, US-953 (1), Forsyth Co. CD 6/25/58.

▲† **B. B. McCormick & Sons**, Box 248, Jacksonville Beach, Fla., LB **$3,597,408**, extension of Runway 18L-36R, U. S. Naval Air Station, Cecil Field, NBy-10242, JACKSONVILLE, FLA. 6th Naval Dist., Bldg. 13, U. S. Naval Base, Charleston, S. C. Bids June 24, CD 6/9.

▲ **Sullivan, Long & Hagerty**, 2028 2nd Ave. N., Bessemer, Ala. LB **$1,969,742**, est. $1,750,000 sewage treatment plant to serve Shades Valley area, BIRMINGHAM, ALA. Jefferson Co. Comn., Courthouse, Birmingham, Ala. Bids July 1. CD 6/4.

BUILDINGS—LB & CA

▲ **Consolidated Eng. Co.**, 20 E. Franklin St., Baltimore 2, Md., CA Est. **$2,500,000**, brick, steel, concrete OFFICE BLDG., CHARLESTON, W. VA., Chesapeake & Potomac Tel. Co. of W. Va., 816 Lee St., Charleston, W. Va.

▲† **Coite Somers Co.**, Vidalia, Ga., CA **$3,586,609**, BARRACKS COMPLEX FY-58, ENG-09-133-58-62, FORT STEWART, GA. U. S. Eng., Box 889, Savannah, Ga., Bids June 24. CD 7/9, under LB.

▲ **G. E. Bass & Co.**, 2715 N. State St., Jackson, Miss. LB **$1,848,033**. (8 bidders), 240 unit APARTMENT BLDGS. for married students at Ala. Polytechinic Institute, AUBURN, ALA. State Bd. Educ., Montgomery, Ala. Bids July 1. CD 6/4.

▲ **Bradford Builders, Inc.**, 132 Aragon Ave., Coral Gables, Fla. CA **$4,369,065** low rent brick, masonry HOUSING (Simpson Village) for Negroes, Ala. 1-11, BIRMINGHAM, ALA. Birmingham Housing Auth., 2323 7th Ave. N., Birmingham, Ala. Bids June 24, awarded June 30. CD 7/9, under LB.

▲† **George A. Fuller Co.**, Peachtree Bldg., Atlanta, Ga. CA **$13,425,000**. 837 units Capehart HOUSING at Fort Campbell (Clarkesville), ENG-40-058-58-1, FORT CAMPBELL, KY. U. S. Eng., 306 Federal Office Bldg., Nashville 2, Tenn. Bids June 12. CD 6/17, under LB.

MIDDLE WEST

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

July 23 Michigan July 29 Wisconsin

STREETS AND ROADS

July 23 Michigan July 29 Wisconsin

BUILDINGS—BA

▲ **O., Circleville**—PLANT—BA 7/22—General Elec. Co. Circleville Wire Div., 1 River Rd., Schenectady, N. Y. (selected list of bidders) plant addn. $3,374,000. Wilbur Watson & Assoc., 2930 Prospect Ave., Cleveland, Zone 15, engrs.

▲ **O., Kent**—DORMITORIES, etc.—BA 7/30—Dpt. P. Wks., State Dpts. Bldg., Columbus, 2 women's dormitories and remodeling work at Verder Hall, Kent State University. $2,500,000. Plans deposit $50 general, $40 mechanicals. Fulton, DelaMotte & Assoc., 6014 Euclid Ave., Cleveland, Zone 3, archts. CD 2/12/56.

HEAVY CONSTRUCTION—LB & CA

▲ **Samuel N. Zarpas**, 1812 Wabash Ave., Pittsburgh, Pa. LB **$1,772,900**, est. $1,250,000. (2 bidders), Cleveland Area NIKE SITE, Painesville, Lake Co., OHIO. U. S. Eng., 925 New Federal Bldg., Pittsburgh 14, Pa. CD 6/4.

▲ **INDIANA**—State Hy. Dpt., John Peters, chn., State House Annex, Indianapolis,

Ind.—**Traylor Bros., Inc.**, Sta. B, Box 66, Evansville, Ind. CA **$2,342,948**, est. $2,604,111. rein.-con. pavement and twin structural plate pipe culvert 5.776 mi., US 50, Contr. 4425, F-153 (2), Dearborn Co.;

Ind.—**Muncie Paving, Inc.**, Cornbread Rd., Muncie, Ind. CA **$1,448,505**, est. $1,710,599. rein.-con. pavement and rein.con. arch structure 5.129 mi., SR 32, Contr. R-4427, F-391 (4) Delaware Co.;

Ind.—**Spears-Dehner, Inc.**, 1212 Clark St., Fort Wayne, Ind. CA **$967,092**, est. $1,025,928. rein.-conc. pavement 6.836 mi., SR 32, Contr. 4428, F-391 (6), Delaware and Randolph Counties. Grand total $4,758,545. Bids May 27. CD 6/5, under LB.

▲ **Harry Thompson, Inc.**, 228 N. LaSalle St., Chicago, Ill. CA **$1,876,100**. Imprv. Navy Pier, CHICAGO, Ill. City, City Hall, Chicago, Ill. Bids 7/8. CD 6/12.

▲† **Steenberg Constr. Co.**, 1371 Marshall Ave., St. Paul, Minn., CA $5,883,851. NIKE installations near Roberts, Wis., and Farmington, St. Bonifacius and Bethel, Minn., Inv. ENG-21-018-58-19, WISCONSIN-MINNESOTA. U. S. Eng., 1217 U. S. Post Office & Custom House, St. Paul, Minn. Bids June 24. CD 6/27, under LB.

▲† **Gust K. Newberg Constr. Co. & Hoyle-Newberg Constr. Co. Inc.**, 2040 N. Ashland, Chicago, Ill., CA **$10,127,000**, airfield pavements K. I. Sawyer U.S. Air Force Base, ENG-20-064-58-57, MARQUETTE, MICH. U.S. Eng., 2101 Washington Blvd., Detroit, Mich. Bids June 17. (Correction-type of work). CD 6/26 under CA, Public Buildings.

BUILDINGS—LB & CA

▲ **Merrick Realty Co.**, 21055 Lorain Ave., Cleveland 26, O. Owner Builds. **$2,225,000** COLLEGE PARK 100 homes, Wyleswood Rd. BEREA, O. Burin & Hazen, 21055 Lorain Ave. Cleveland 26, O. archts.

▲ **Frank Messer & Sons, Inc.**, Paddock Rd., Cincinnati, O., CA **$1,618,778**, 136-unit HOUSING, Suter Ave., CINCINNATI, O. Cincinnati Metropolitan Housing Auth., 595 Armory St., Cincinnati, O. Bids May 28. CD 6/3, under LB.

▲ **Cunningham-Limp Co.**, 3087 W. Grand Blvd., Detroit, Mich. CA Est. **$1,828,000.** WIRE PLANT addn., DOVER, O. General Electric Co., 1 River Rd., Schenectady, N. Y. Dalton, Dalton & Assoc., The Arcade, Cleveland 14, O., archts.

▲ **Durable Constr. Co.**, 1325 N. Main St., Wheaton, Ill. Owner Builds. **$24,000,000.** 1,200 HOMES, SCHOOL, well house and pumping station, water mains, sewage disposal plant, sewers, bit. conc. paving, Gary Ave., north of North Ave., near WHEATON, ILL. Robert Salisbury & Associates, 213 W. Wesley Ave., Wheaton, Ill., archt.

▲ **J. H. Findorff & Son**, 601 W. Wilson St., Madison, Wis., CA **$1,797,000**, general contract, 3 men's DORMITORIES, MADISON, WIS., Wisconsin University Bldg. Corp., Madison, Wis., Bids May 29. CD 6/11, under LB.

▲ **Darin & Armstrong**, 2041 Fenkell, Detroit, Mich., CA **$2,477,000**, general contract, JUVENILE DETENTION HOME, DETROIT, MICH. Bd. Supervs. Wayne Co., City-County Bldg., Detroit, Mich. Bids May 27, CD 6/18, under LB;

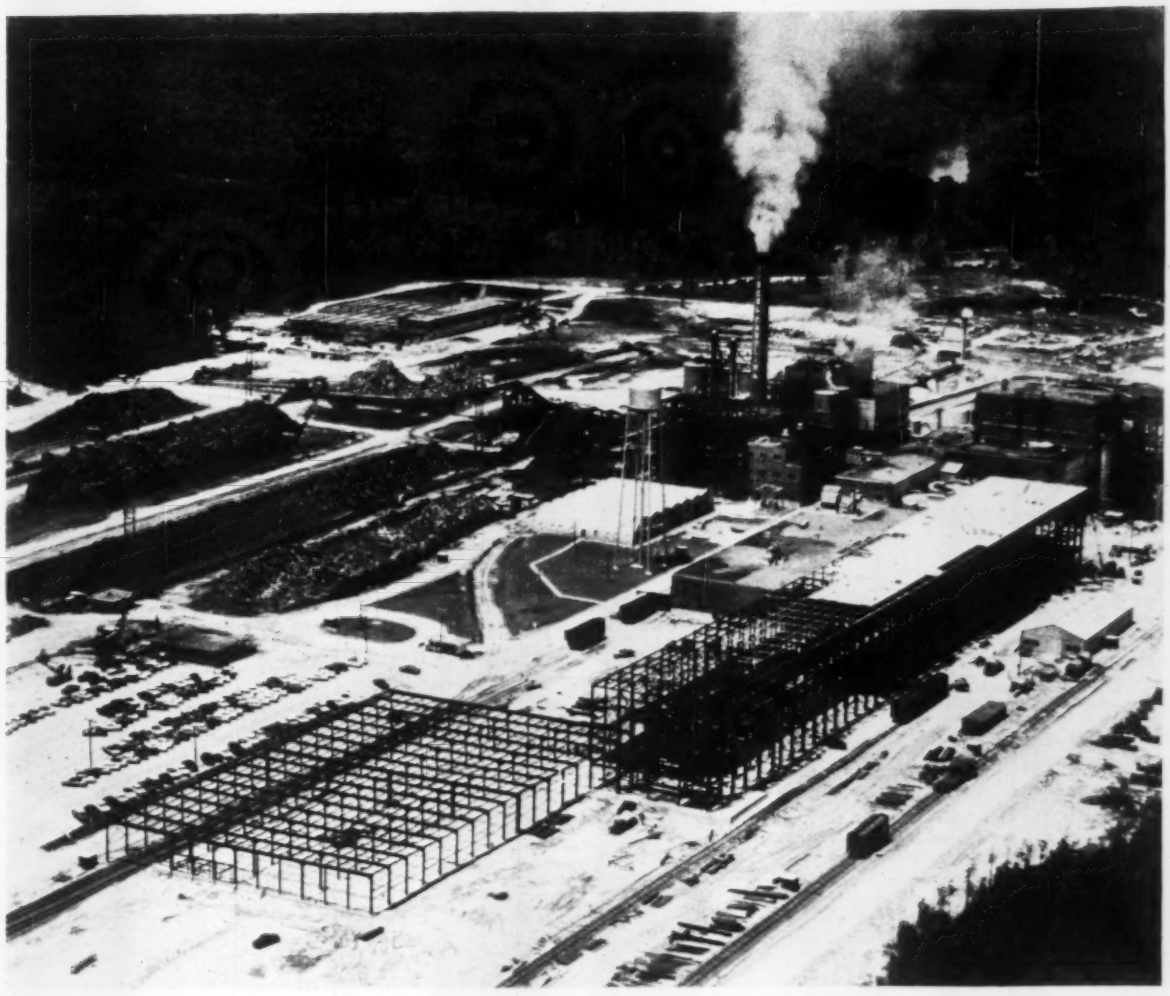
John E. Green Plg. & Htg. Co., Inc., 220 Victor, Highland Park, Mich., CA **$738,830**, mechanical work for Juvenile Detention Home (Detroit, Mich.)

▲ **A. Mintz Contr. Co.**, 4098 Lee Rd., Cleveland 28, O. CA Approx. **$10,000,000.** 50 unit SHOPPING CENTER, 150,000 sq. ft. department store NORTH RIDGEVILLE, O. Ridgeview Center, Inc., 4098 Lee Rd., Cleveland 28, O. Howard G. Greene Design Service, 2128 Lee Rd., Cleveland 18, O. archts.

▲ **Rosco Homes, Inc.**, 38 S. Dearborn St., Chicago, Ill., Own Forces, **$1,500,000**, 90 HOMES, Normandy Villa 89, CHICAGO HEIGHTS, ILL.

▲ **Chesterfield Builders**, 3034 W. Devon Ave., Chicago, Ill., Own Forces, **$1,500,000**, 70 HOMES, sewer, water, paving, SW corner Central Rd. and Warren

(Continued on page 96)



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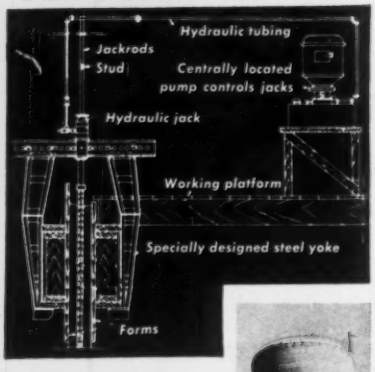

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(Continued from page 94)

Rd., GLENVIEW, ILL. Eugene A. Meyer, 3034 W. Devon Ave., Chicago, Ill., archt.

WEST OF MISSISSIPPI

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

BRIDGES

July 22 Iowa July 25 Minnesota

STREETS AND ROADS

July 22 Iowa July 25 Minnesota

▲† **N. D., Minot**—ALERT FACILITIES—BA 8/5—U. S. Eng., 1709 Jackson St., Omaha, Neb., alert facilities, Minot Air Force Base, ENG-25-066-59-8. $3,500,000. CD 6/19.

BUILDINGS—BA

▲ **Tex., McAllen**—SHOPPING CENTER—Bids Asked—Pecan Heights Development Corp., Fred Smith, pres., shopping center. $1,750,000. CD 6/20.

HEAVY CONSTRUCTION—LB & CA

▲ **NEBRASKA**—State Dpt. Rds. & Irrigation, Lincoln, Bids opened 6/26,

Abel Constr. Co., 1815 Y St., Lincoln, Neb. LB **$1,701,866** grading, paving 5.8 mi. Lincoln-Omaha Rd. near Lincoln, Proj. 1-80-9 (16) ING-80-9 (18), Lancaster Co. CD 6/17.

▲ **TEXAS**—State Hy. Comn., Austin,

Tex.—Ivan Dement, Box 1787, Amarillo, Tex. CA **$624,746**, grading, structures, etc. 7.027 mi. SH 152, Proj. DF 720 (12) & DF 720 (13) Hutchison Co.; CA **$1,315,771**, grading, structures, etc. 8.282 mi. Hy. US 60 and 87, Proj. F 60 (14), Randall Co.;

Tex.—Texas Bitulithic Co., P.O. Box 10365, Dallas, Tex. CA **$2,912,705**, concrete pavement, flex. base, etc. 9.881 mi. Hy. IH 45 Proj. I 45-3 (13) 250 and F 569, Ellis Co.;

Tex.—Trotti & Thompson, Inc., P.O. Box 70, Beaumont, Tex. CA **$518,678**, grading, etc. 8.465 mi. Hy. US 90 and FM 365, Proj. DF 352 (3) Liberty and Jefferson Counties;

Tex.—F&C Engineering Co., P.O. Box 2426, Houston, Tex. CA **$1,247,742**, grading, structures, etc. 3.06 mi. Hy. IH 10, Proj. I 149 (15) Orange Co.;

Tex.—R. N. Adams, P.O. Box 581, Kaufman, Tex. CA **$1,180,282**, grading, etc. 5.401 mi. Hy. IH 45, Proj. I 45-2 (2) 108, Walker Co.;

Tex.—A.K. Gillis & Son & W. R. Bryd, 115 Fore St., Sulphur Springs, Tex. CA **$506,590**, grading, etc. 11.934 mi. Hy. US 79, Proj. F 456 (6) Panola Co. Grand total $8,306,514. Bids June 10, awarded June 30. CD 6/13, under LB.

▲ **TEXAS**—State Hy. Comn., Austin,

Tex.—Dodds & Wedgartner, Inc., P.O. Box 1950, San Benito, Tex., CA **$1,267,369**, grading, structures, etc., 2.002 mi. Hy. US 83, Proj. U 93 (6), U, UG 93 (7) & F 93 (9) Cameron Co.;

Tex.—Austin Rd. Co. & Worth Constr. Co., P.O. Box 1590, Dallas, Tex., CA **$2,516,865**, c. conc. 10.604 mi. Hy. IH 35, Proj. I 35-6 (35) 463, Denton Co.;

Tex.—Austin Road Co., Austin Bridge Co., P.O. Box 1590, Dallas, Tex., CA **$4,878,879**, grading, etc., 14.502 mi. Hy. IH 10 and FM 1724, Proj. I 10-8 (24) 821, Chambers Co.;

Tex.—Fred Hall & Son, Uvalde Constr., P.O. Box 486, Valley Mills, Tex., CA **$1,041,843**, grading, etc., 13.807 mi. Hy. SH 14, Proj. F 138 (5) & F 161 (5), Limestone Co.;

Tex.—Austin Bridge Co., Austin Constr. and Austin Paving Co., P.O. Box 1590, Dallas, Tex., CA **$740,710**, grading, etc., 6.209 mi. Hy. IH 45, Proj. I 832 (21) & I 45-3 (22) 267, Dallas Co. Grand total $10,445,536. CD 6/17, under LB.

▲ **COLORADO**—State Hy. Dpt., 4201 East Arkansas, Denver, Bids opened 7/9,

Amis Constr. Co., Box 1871, Oklahoma City, Okla. LB **$1,724,327**, grading, structures 4.733 mi. Steamboat Springs, Proj. No. F 005-2 (14), Routt Co. CD 6/30.

▲ **Colorado Constructors, Inc.**, 725 W. 39 Ave., Denver, Colo., LB **$1,796,000** (3 bidders), dam, spillway, etc. North Catamount Creeks, COLORADO SPRINGS, COLO. City, City Hall, Colorado Springs, Colo. Bids June 28. CD 6/10.

BUILDINGS—LB & CA

▲† **Rob. E. McKee, General Contractor, Inc.**, Box 562, El Paso, Tex. LB **$2,137,000**. 23 masonry BLDGS. 11 prefab. BLDGS. 55,000 sq. yd. hot mix paving 440,000 sq. yd. single bit. tr., utility lines, etc., Fort Bliss, ENG-29-005-58-140, EL PASO, TEX. U. S. Eng., Box 1536, Albuquerque, N. M. Bids June 26. CD 6/9.

FAR WEST

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

BRIDGES

July 30, 31 California

STREETS AND ROADS

July 30, 31 August 6, 14 California

BUILDINGS—BA

▲ **Calif., Santa Barbara**—SCHOOL—BA 7/30—Santa Barbara Bd. Educ., constr. La Colina Junior High School, Foothill and La Cienigitas Rds. $2,000,000. CD 2/12/57.

▲ **Calif., San Jose**—HEALTH, etc.—BA 8/5—State Div. Architecture, 1120 N. St., Sacramento, 4 story 42,000 sq. ft. rein.-con. health bldg. with penthouse and 3 story, 85,800 sq. ft. rein.-con. art bldg. at San Jose State College, W.O. 4005GC-39 and W.O. 4005GC-30. $2,318,600. Plans deposit $100. CD 2/20.

▲ **Ore., Portland** — SCHOOL — BA 8/6 — Multnomah School Dist. No. 1,620 N.E. Halsey St., Southeast High School, 86th and Bush. $5,000,000. Stanton Boles, Maguire & Church, Concord Bldg., archts. CD 5/22.

▲† **Idaho, Arco**—EXPERIMENTAL BREEDER REACTOR II FACILITY—BA 8/13—Atomic Energy Comn., Idaho Operations Office, Idaho Falls, constr. Experimental Breeder Reactor II Facility. $3,000,000. CD 7/3.

HEAVY CONSTRUCTION—LB & CA

▲† **Peter Kiewit Sons' Co.**, Box 748, Arcadia, Calif. CA **$2,068,091**. constr. Tactical Area III at Marine Corps Air Station, Spec. 7439-56, EL TORO, CALIF. Eleventh Naval Dist., 1220 Pacific Hy., San Diego, Calif. Bids June 20. CD 5/27.

▲ **Guy F. Atkinson Co.**, 223 St. at Santa Fe. Ave., P. O. Box 259, Long Beach, Calif. CA **$2,127,330**, est. $2,000,000. constr. transit shed, wharf reconstr. at Pier A, Berths 1 and 2, LONG BEACH, CALIF. Long Beach Harbor Dpt., 13333 El Embarcadero, Long Beach, Calif. Bids June 19. CD 6/24, under LB.

▲ **Ruane Corp.**, 8415 E. Las Tunas, San Gabriel, Calif. CA **$1,711,089**, transit shed; railroad utilities at Pier B, Middle Harbor, LONG BEACH, CALIF. Long Beach Harbor Dpt., 1333 Embarcadero, Long Beach, Calif. Bids June 26. CD 6/30, under LB.

▲† **Patti Constr. Co.**, 1634 Admiral Blvd., Kansas City, Mo. LB **$3,760,000** (13 bidders) constr. SAGE technical facilities at Norton Air Force Base, ENG-04-353-58-1, SAN BERNARDINO, CALIF. U. S. Eng., 751 S. Figueroa St., Los Angeles, Calif. Bids June 19. CD 12/6/55.

▲† **Peter Kiewit Son's Co.**, 345 Kieways Ave., Arcadia, Calif. CA **$5,565,125**. constr. 2nd increment grading and paving taxiways and runways at Naval Aircraft facility, Spec. 21687-57, SAN CLEMENTE ISLAND, CALIF. Eleventh Naval Dist., 1220 Pacific Hy., San Diego, Calif. Bids June 17. CD 6/23, under LB.

BUILDINGS—LB & CA

▲ **F. P. Lathrop Constr. Co.**, 800 University Ave., Berkeley, Calif. LB **$2,221,790** (12 bidders) HIGH SCHOOL, incl. admin. office, physical educ., site work, Decota, FREMONT, CALIF. Washington Union High School Dist., 415 S. Main St., Fremont, Calif. Bids July 2. CD 6/25.

▲† **Diversified Builders, Inc.**, 6855 Rosecrans Blvd., Paramount, Calif. CA **$1,935,000**, est. $1,000,000 addnl. training facilities at Marine Corps Base, Spec. 11751-57, TWENTY NINE PALMS, CALIF. Eleventh Naval Dist., 1220 Pacific Hy., San Diego, Calif. Bids June 23. CD 6/30, under LB.

CANADA

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

STREETS AND ROADS

July 29, 31 British Columbia

▲ **N. S., Halifax**—SCIENCE—BA 7/22—Dalhousie University, Studley Rd. (selected list of bidders) 80x280 ft. science building. $1,720,000. Mathers & Haldenby, 10 St. Mary St., Toronto, Ont., archts. J. Philip Dumaresq & Assoc., 77 Upper Water St., assoc. archts. CD 9/18.

BUILDINGS—LB & CA

▲ **Foundation Co. of Canada Ltd.**, 1302 11th Ave. S.W., Calgary, Alta., CA **$2,000,000** (6 bidders), 8 story, 104,000 sq. ft. OFFICE, 5th Ave. and 2nd St. S.W., CALGARY, ALTA. The Alberta Wheat Pool, Lougheed Bldg., Calgary, Alta. Bids June 11. CD 6/9.

▲ **Eastern Constr. Co.**, Box 161, Walkerville, Ont., CA **$1,840,000**, est. $1,800,000. 3 story, bsmnt., 171x264 ft. steel frame MEN'S RESIDENCE, LONDON, ONT. University of Western Ontario, Rm. 204 Admin. Bldg., London, Ont. Bids July 4. CD 6/9.

▲ **Thomas Fuller Constr. Co.**, 199 Richmond Rd., Ottawa, Ont., CA **$2,660,000**, 2 story, bsmnt., rein.-con. throughout, face brick walls. CENTRAL HEATING PLANT, Riverside Dr., OTTAWA, ONT. Dpt. P. Wks., Hunter Bldg., Ottawa, Ont. Bids May 21. CD 5/28, under LB.

ALASKA

HEAVY CONSTRUCTION—LB & CA

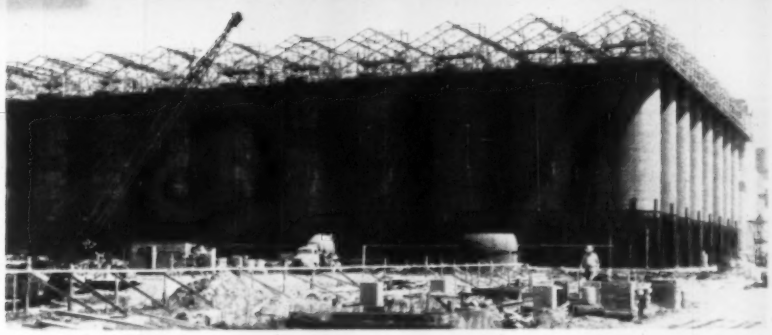
▲† **S. S. Mullen, Inc.**, P.O. Box 3886, Terminal Annex, Seattle, Wash., CA **$1,866,010**, est. $1,581,561 (5 bidders) cement, concrete and b. conc. repaving 150x600 ft. section of Runway 11-29 at King Salmon Airport, Inv. 58-50, NAKNEK, ALASKA. U. S. Eng., P.O. Box 1288, Anchorage, Alaska. Bids June 24, awarded June 30. CD 7/1, under LB.

AMERICANS ABROAD

BUILDINGS—LB & CA

▲ **Galangco Co.**, Manila, P.I., CA **$2,480,000**, 5 story embassy OFFICE BUILDING, MANILA, PHILIPPINE ISLANDS. U. S. Dpt. of State, Foreign Bldgs., Wash., D. C., U.S.A. Bids 1/20. CD 1/13.

(Proposal Advertisement see pp. 112 to 114)



Part of the 144 cone bottom precipitators fabricated and erected for Alcoa by PDM. The units, each 24′ diameter x 60′ shell height, represent 8500 tons of plate-work, with another 3100 tons of structural steel on top.

Steel Plate Construction of largest scale for the Chemical Industry by

Pittsburgh-Des Moines

Representative of the breadth of experience and facilities placed by PDM at the service of the chemical industry are our current operations for Alcoa at Point Comfort, Texas. The photos show part of the work in progress for the manufacture of alumina. Directly above, a group of 100′ diameter radial cone bottom mud washers and thickeners, involving 5600 tons of plate fabrication. • For plate and structural work of any scale, we are always at your service.

PDM
STEEL PLATE WORK

Pittsburgh-Des Moines Steel Company

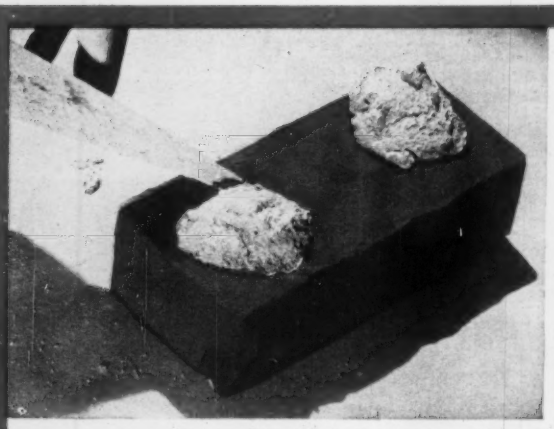
Plants at PITTSBURGH, DES MOINES, SANTA CLARA, FRESNO, and CADIZ, SPAIN

Sales Offices at:

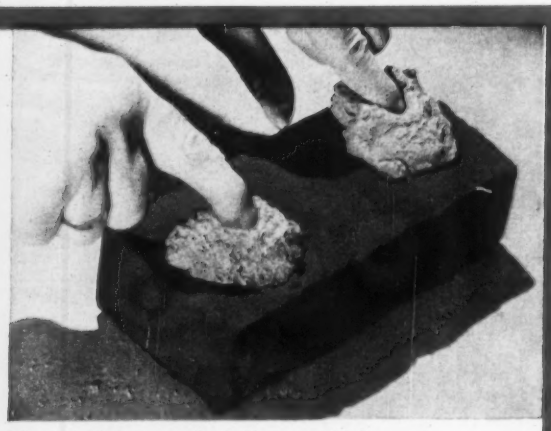
PITTSBURGH (25).....3414 Neville Island
NEWARK (2).....916 Military Park Bldg.
CHICAGO (3)..618 First National Bank Bldg.
EL MONTE, CAL.....P. O. Box 2012
ATLANTA (5)....361 E. Paces Ferry Rd., N.E.
DES MOINES (8).....915 Tuttle Street
DALLAS (1).....1219 Praetorian Bldg.
SEATTLE (1).....Suite 322, 500 Wall St.
SANTA CLARA, CAL.....621 Alviso Road
DENVER (2).....323 Railway Exchange Bldg.

BRIXMENT MORTAR

Has Better Water-Retention



Place a dab of Brixment mortar and a dab of ordinary cement-and-lime mortar on a brick. Wait a minute, then feel each mortar.



The one that stays plastic longer will be the one having the highest water-retention. Feel the difference with Brixment mortar!

—AND HIGH WATER-RETENTION IS ESSENTIAL TO WELL-BONDED, WATERTIGHT MASONRY

Water-retaining capacity is the ability of a mortar to retain its moisture, and hence its plasticity, when spread out on porous brick.

High water-retaining capacity is of *great importance* in mortar. If the mortar does not have high water-retaining capacity, it is too quickly sucked dry by the brick; the mortar stiffens too soon, the brick cannot be properly bedded, and a good bond cannot be obtained.

Brixment mortar has high water-retaining capacity. It strongly resists the sucking action of the brick. Brixment mortar therefore requires less tempering, stays smooth and plastic longer when spread out on the wall. *This permits a more thorough bedding of the brick, and a more complete contact between the brick and the mortar.* The result is a better bond, and hence a stronger and more water-tight wall.

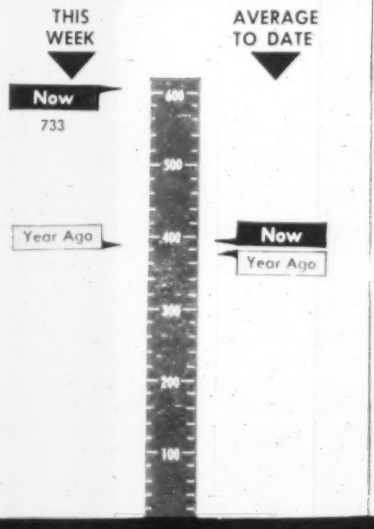
LOUISVILLE CEMENT COMPANY, LOUISVILLE 2, KENTUCKY

Cement Manufacturers Since 1830

Construction Scoreboard

ACTIVITY THIS WEEK

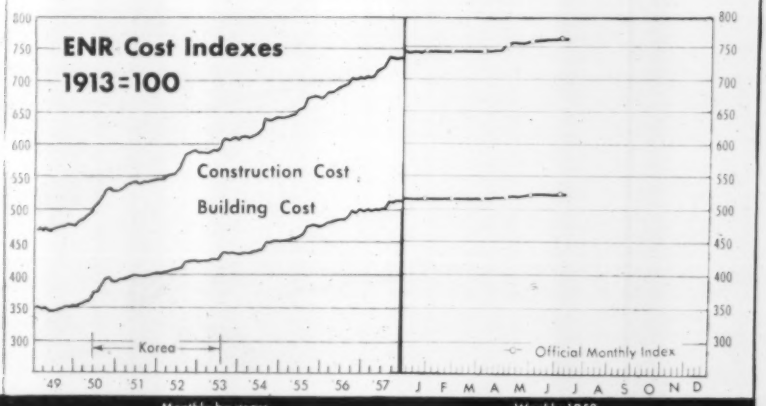
Contract Awards
Millions of Dollars



COST INDEXES AS OF NOW

ENR INDEXES (1913=100), 20-cities' average	Week of July 10 1958	% Change from June 12 1958	% Change from July 11 1957
Construction Cost	762.52	+0.7	+3.7
Building Cost	521.13	+0.5	+1.8

To convert above indexes to 1926 = 100: Divide Construction Cost by 2.030; Building Cost by 1.850.
1949 = 100: Divide Construction Cost by 1.770; Building Cost by 3.518.



AMOUNT OF CONTRACTS LET

By Ownership	This Week	Cum. 29 wks 1958 millions	Cum. 29 wks Chge '57-'58 %
All Heavy Constr.	$733.1	$11,386.5	+7
Private	419.3	4,795.9	−3
Public	313.8	6,590.6	+16
State & Municipal	183.4	4,635.3	+13
Federal	130.4	1,955.3	+21
By Type of Work			
Public			
Waterworks	4.0	169.6	−20
Sewerage	16.7	342.4	+6
Bridges*	14.2	378.2	−8
Highways	75.7	1,805.8	+7
Earthwork, Waterways	4.9	680.0	+4
Buildings, Excl. Housing	74.0	1,500.6	+17
Housing	43.5	846.1	+110
Unclassified	80.8	876.5	+20
Private			
Mass Housing	242.3	2,251.6	+29
Commercial	40.6	1,091.9	+8
Industrial	132.8	1,181.8	−38
Unclassified	3.6	259.0	−3

*Includes private bridges.

NOTE: Minimum size projects included are: Waterworks and waterways, $44,000; other public works, $73,000; industrial buildings, $93,000; other buildings, $344,000.

NEW CAPITAL FOR CONSTRUCTION

	Week of July 10	Cum. 28 wks 1958 millions	Cum. 28 wks Chge '57-'58 %
Corporate Securities	$ 50.2	$2,965.9	−11
State and Municipal:			
All Except Housing	46.9	3,715.6	+28
Housing	...	33.8	−78
Federal Loans	15.6	110.1	−26
Federal Aid	...	...	−100
Total Nonfederal	$112.7	$6,825.5	−21
Federal Appropriations:			
Projects in U. S.	...	$847.4	+178
Outside U. S.	...	5.3	−68
Total New Capital	$112.7	$7,678.2	−14

CONTRACTS AWARDED

	1958 June (millions)	1958 6-Mos. (millions)	% Change from 1957 June	% Change from 1957 6-Mos.
Total U. S., ENR reported	$1,899.9	$9,628.2	+22	+ 2
Private	633.8	4,172.3	−13	− 5
Public	1,266.1	5,455.8	+52	+ 8
State and Municipal	824.4	3,998.5	+20	+10
Federal	441.7	1,457.3	+204	+ 5
ENR Volume Index, 1913=100	661	543	+12	− 1

NEW CAPITAL FOR CONSTRUCTION

Total U. S.	$1,032.0	$7,367.7	−62	+16
State and Municipal Bond Sales	410.4	3,641.0	−10	+13
Corporate Security Sales	396.1	2,817.2	−23	−11
Federal Loans, Aid (nonfederal work)	11.0	91.9	−99	−96
Federal Appropriations (federal work)	214.6	817.7	+374	+1,671

* Includes funds for outside U. S.

MATERIALS SHIPMENTS

	Unit	1958 Mar. (M) Apr. (A) May (My) June (J)	Cum. (No. of Mos.)	Percent Change from Year Ago Mo.	Cum.
Portland Cement, Bur Mines	thous bbls	30,525(My)	97,783(5)	+ 5	− 2
Conc Paving Awards, PCA	thous sq yd	11,045(J)	54,693(6)	−0.4	+ 4
Fabricated Structural Steel	thous tons	328(My)	1,588(5)	−13	− 6
Bookings, AISC	thous tons	224(My)	976(5)	−32	−41
Reinforcing Bars, Net, AISI	thous tons	191(My)	733(My)	+ 2	−34
Lumber, NLMA	mil fbm	2,851(My)	12,905(5)	− 9	− 8
Orders	mil fbm	2,857(My)	12,966(5)	−11	− 9
Production	mil fbm	2,732(My)	12,633(5)	−11	−10
Douglas Fir Plywood, DFPA, ⅜" basis					
Production (average per week)	mil sq ft	100.3(A)	109.0(4)	−15	+17
Orders (average per week)	mil sq ft	117.4(A)	112.0(4)	+ 9	+12
Clay Products, Bureau of Census					
Brick, Ungl, Common, Face	mil bri	436.6(M)	1,053.8(3)	− 4	− 8
Vitrified Clay Sewer Pipe	thous tons	114.6(M)	287.8(3)	−14	−18
Structural Tile, Unglazed	thous tons	41.4(M)	109.3(3)	−20	−23
Asphalt Products, Bureau of Census					
Asphalt Roofing	thous sales sqs	5,158.6(A)	14,180.0(4)	+17	−10
Asphalt Siding	thous sales sqs	83.0(A)	254.6(4)	+ 4	−26
Aluminum, Wrought, Net, Bur Census					
Sheet and Plate (non-heat treatable)	mil lbs	81.1(A)	284.9(4)	− 5	−10
Wire and Cable	mil lbs	22.2(A)	84.8(4)	−10	−13
Extruded Shapes (soft alloys)	mil lbs	50.2(A)	189.6(4)	− 2	− 2

EMPLOYMENT AND FAILURES

Contract Const Employment, BLS	thous	2,835(J)	2,481(6)**	− 6	− 8
Contractor Failures, Dun & Bradstreet					
Number		207(My)	971(5)	+14	+ 6
Liabilities	thous	$10,771(My)	$50,919(5)	−0.5	+ 3

** Average per month

a pleasure

U.S. cast iron PIPE

FOR WATER, SEWERAGE AND

to handle!

True. A balky wife can be a problem.
But Tyton Joint® pipe . . . never!

In fact, Tyton Joint pipe is so easy to assemble
that even inexperienced crews pick up
the know how quickly. Only one accessory needed—
a specially designed rubber gasket that seats into the bell.
The connecting pipe slides in, compresses the gasket
to give a tight, permanent seal.

No bell holes. No caulking. No nuts
or bolts to fasten. And Tyton Joint pipe
can be laid in rain or a wet trench.

Want full details on how Tyton Joint pipe
can save *you* money, time and trouble?
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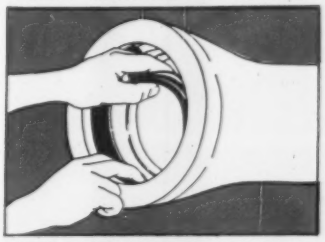
General Office: Birmingham 2, Alabama

A WHOLLY INTEGRATED PRODUCER FROM MINES
AND BLAST FURNACES TO FINISHED PIPE

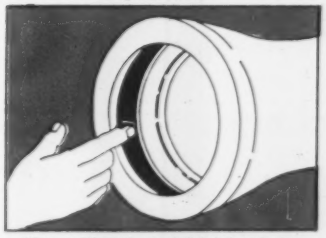
INDUSTRIAL SERVICE CAST IRON

U. S. TYTON JOINT

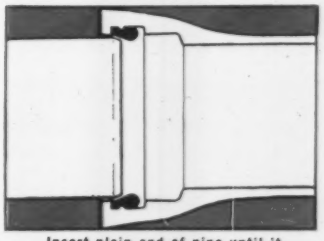
ONLY FOUR SIMPLE ACTIONS



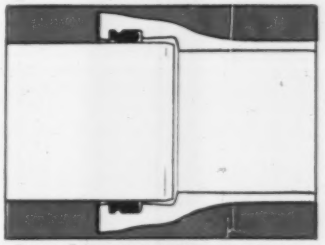
Insert gasket with groove over bead in gasket seat



Wipe a film of special lubricant over inside of gasket



Insert plain end of pipe until it contacts gasket



Force plain end to bottom of socket . . . the job's done!

6" Tyton Joint pipe for golf course sprinkler system in Illinois

Congress Moving $2.4 Billion Housing Bill

Senate bill allots $1.8 billion to urban renewal, plus loans of $525 million for college facilities

Congress, not rated as a penny-pincher in 1958, is taking an open-handed attitude toward housing legislation this session.

The lawmakers earlier this year passed an "emergency" $19 billion housing bill as an anti-recession measure. Now as a second bill, the "regular" housing legislation, is moving through Congress.

This second piece of legislation is even more generous than the first. It is a multi-billion package providing funds for urban renewal work, farm housing research, college housing, and even for college classrooms, laboratories and teaching facilities.

The Senate last week approved $2.47 billion for the various projects after first knocking out $375 million from the measure sponsored by Sen. John Sparkman (D.-Ala.).

In the House, a banking subcommittee began hearings last week on the matter. The subcommittee is holding an accelerated session to assure getting a bill through before Congress adjourns.

Some further cuts are expected in the Senate-passed bill when it reaches the House. The House traditionally has raised more roadblocks to public housing than the Senate. But even with these it appears the lawmakers still will authorize more than $4 billion in all for housing legislation this session.

The emergency measure included $1.5 billion for Fannie Mae purchases of GI and FHA-assisted mortgages, and $300 million for direct loans to veterans.

• What the bill provides—The Sparkman bill breaks down this way:

- $1.8 billion for urban renewal grants over a six-year period.
- $400 million for college housing loans.
- $125 million in loans for college classrooms, plus authority for the government to insure an additional $250 million of private loans for college facilities.
- $150 million additional for direct loans to veterans.

The bill also authorizes construction of 17,500 units of public housing. This was a cut from 35,000 units recommended by Senator Sparkman. But even the smaller amount may be changed in the House. The Administration is opposed to any new authorization. But in final form, a bill will authorize more units—probably over 10,000.

The Senate bill, with Administration approval, also extends to July 1, 1959, the time limit for construction of 70,00 units previously authorized, but not yet built.

The Senate also raised by $3,000 the maximum mortgage that the government will back when a man in military service buys a house. The recommended figure now is $20,000. Also lifted was the ceiling on rural housing mortgages which would go from $8,000 to $9,000.

The total funds approved are $885 million more than requested by the Administration, and higher by $2.7 billion if the emergency legislation is counted.

Albert M. Cole, head of the Housing and Home Finance Agency, criticized the pending Sparkman bill last week as "hasty and ill conceived," and urged that it be cut back.

But the fight over housing legislation is not only over funds this time. It also centers around two highly controversial proposals. These would make significant changes in the philosophy of the present housing laws by returning more power to the states.

One of the proposals has been advanced by the Administration, the other by Democrats. In both cases it appears likely the Administration will lose out.

• Urban renewal cut back—The Administration is strongly in favor of gradually cutting back on urban renewal grants. States and localities then would pick up where the federal government leaves off.

This is in line with President Eisenhower's attempts to return more power and initiative to the states. The federal government now pays two-thirds of the cost of urban renewal and slum clearance projects. Under the President's recommendation, this percentage would be reduced gradually to 50% by fiscal 1961.

But the Senate turned a cold shoulder to the recommendation. It appears to be a dead issue this session.

• Public housing fight—The other controversial proposal, this one sponsored by Democrats and included in the Senate bill, also turns on a federal-state relationship. In this case, the Democrats want to give more power to the states in planning, building and administration of public housing projects (ENR July 10, p. 115).

But on this point, the Administration has abandoned its desire to give more control to local governments. It is strongly opposed to the proposal.

The Democrats contend that public housing has been stifled by bureaucratic red tape. They say giving local governments more authority to run the programs would stimulate more housing.

The Administration does not agree. It admits that it makes an exhaustive review of all phases of the program, but denies this is what has held it up. It contends this review is necessary in order to assure proper handling of federal funds.

• Liberalize conventional mortgages—One other proposal is getting serious attention in the House, though it was not included in the Sparkman bill. This plan, advanced by savings and loan associations, would create a quasi-government board that would insure the top 20% of conventional mortgages of the type handled by savings and loan groups.

As federal law now stands, savings and loan associations require a down payment of at least 20% when a house is financed with a conventional mortgage.

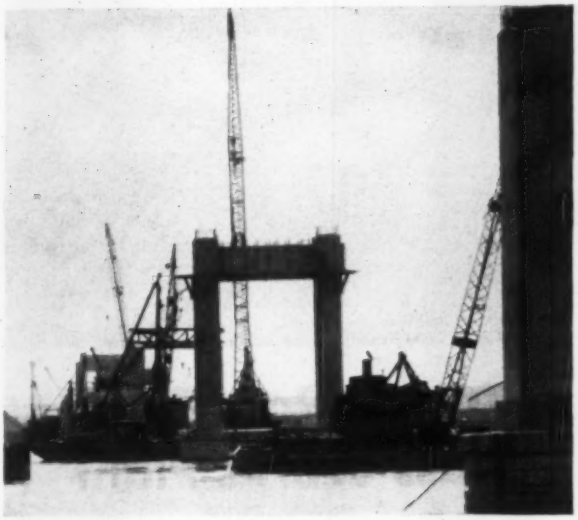
But with federal backing of the top 20% of the mortgage, they could loan up to 90% of the appraised value of the property. This would cut the required down payment by prospective homeowners to only 10%. The savings and loan associations say this would allow them to compete more favorably with other lenders who provide mortgage money under Federal Housing Administration and Veterans Administration regulations. Under FHA rules, a lender can grant up to 97% of a property's appraised value. And a VA-backed loan can cover the full amount of the property's appraised value.

The Administration is in favor of a program along these lines, but it wants to include all lenders. It opposes limiting such a law to savings and loan groups alone. It wants more time to work out a program that would include all lending institutions.

(*B&F continued on page 105*)

PIPELINE

HIGHWAY



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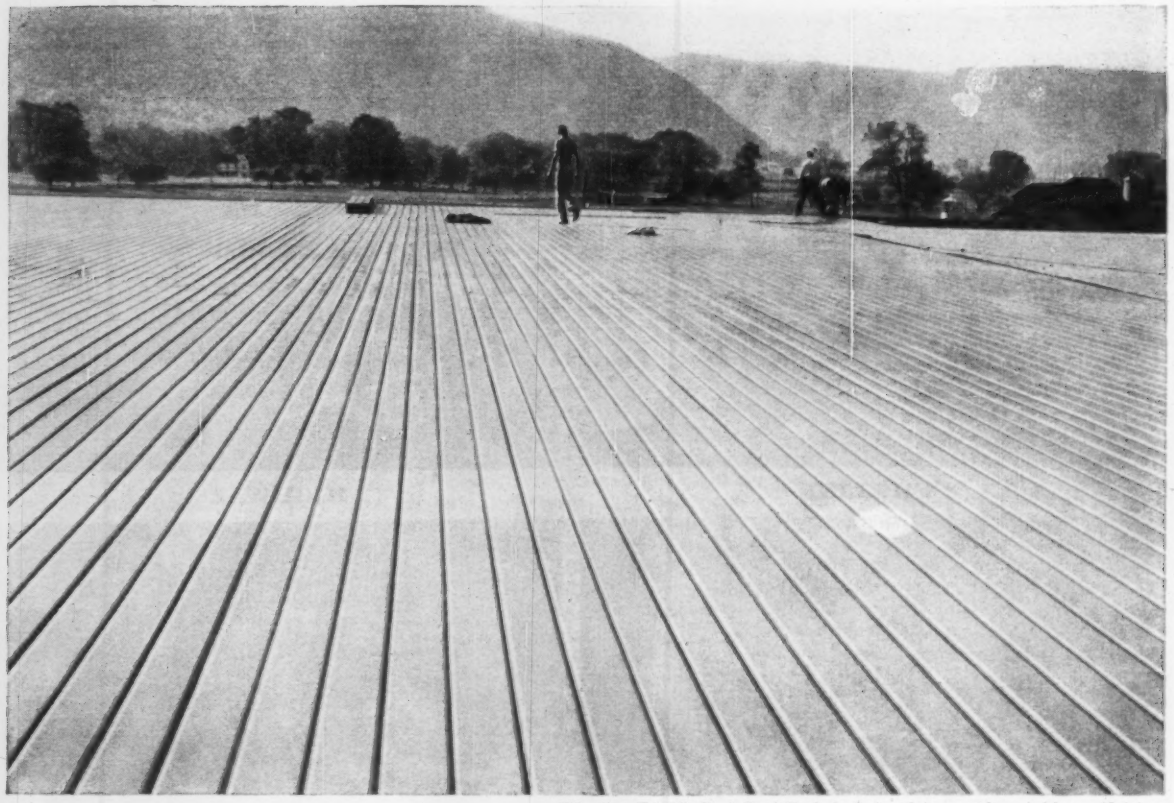
Twin City Fire Insurance Company, *Minneapolis 2, Minnesota*



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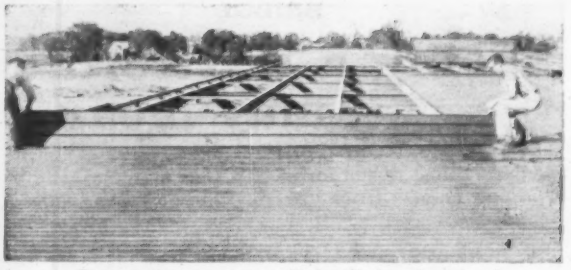

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Here's the '58 Alaskan Construction Market

Type of Construction	New Proposed Work Jan-June 1958	1957	Contracts Awarded Jan-June 1958	1957
	(000 omitted)		(000 omitted)	
Total	$59,546	$56,623	$49,183	$88,854
Private	23,580	15,650	2,116	56,000
Public	35,966	40,973	47,067	32,854
State and municipal	....	9,492	....	816
Federal	35,966	31,481	47,067	32,038
Public				
Waterworks	....	1,485	697	216
Sewerage	....	700	....	....
Bridges	897	1,274	956	399
Highways	8,966	18,044	1,292	....
Earthworks, dams, waterways	1,182	1,419	58	4,105
Buildings, excl. housing	18,225	14,479	16,080	10,516
Housing	....	....	10,287	....
Unclassified	6,696	3,572	17,697	17,618
Private				
Mass housing	10,380	....	1,200	1,000
Industrial	....	6,650	329	55,000
Commercial	700	9,000	....	....
Unclassified	12,500	....	587	....

Alaska: $100 Million in '58

Alaska—right now—is a rich construction market. The territory, now approaching statehood, may register at least $100 million in contract awards this year. Heavy construction contracts for work in the territory totaled $49.2 million during the first six months of this year and new proposed work during the same period tallied $59.5 million (see table), ENR figures show.

The largest chunk of awards in the first six months was federal—$47.1 million. That illustrates how Alaska now depends on U. S. government funds (ENR July 10, p. 24). But no matter what the source, the business is there. And this year Alaska is off to a good start in construction—the first half total of $49.2 million contrasts with awards of $88.9 million during all of 1957.

• **Proposed work climbs**—The total of all new proposed work also shows promise. During the first half, proposed future construction amounted to $59.5 million. Throughout the entire year of 1957, new proposed work registered only $56.6 million.

The private sector also shows increased strength. First half total was $23.6 million; in 1957, private proposed work totaled only $15.7 million.

Of the total proposed in this year's first half, 40% is private. It includes $10.4 million of mass housing and $12.5 million of unclassified jobs.

It is apparent that private capital has been attracted to the area this year, even before statehood became the certainty that it is now. As a state, this interest should be heightened and greater emphasis will be placed on developing Alaska's vast mineral, lumber and water resources.

• **Private work in 1957**—With respect to the more than $88 million in contracts awarded last year, private activity showed strongly last year too, with $56 million of the $88 million total. This volume of private work developed from a single contract of $55 million for a pulp mill at Sitka. The plant is scheduled to enter production sometime in 1960.

The remaining $1 million in private contracts last year was for housing.

During the first six months of this year, private contract awards stand at slightly more than $2.1 million. However, a significant share of that total—$1.2 million—is for mass housing.

• **Public work**—The largest amount of public work this year, and also in 1957, is "unclassified." This largely reflects awards for federal military installations. In fact, contracts for this type of work during the first half already outstrip all of 1957.

Public buildings contracts (exclusive of housing) valued at $16.1 million through June also are well ahead of the $10.5 million awarded during 1957.

Public housing this year amounts to $10.3 million. There were no awards for this type of work in 1957.

Razing to Signal Start Of $100 Million Project

The first major work on Boston's $100 million Prudential Center will begin in December with demolition of the Mechanics Building. A three-months' notice to vacate has been given operators of the sports and exhibition center.

Major structures planned for the center include Prudential's 50-story tower building, an adjacent 28-story hotel, and a new civic auditorium and convention hall. The latter will contain at least 150,000 sq ft, according to Boston's mayor, John B. Hynes. The price tag Prudential Life Insurance Co. puts on the project is $100 million, though earlier company statements (ENR Jan. 31, 1957, p. 75) said ultimate outlays could be double this amount.

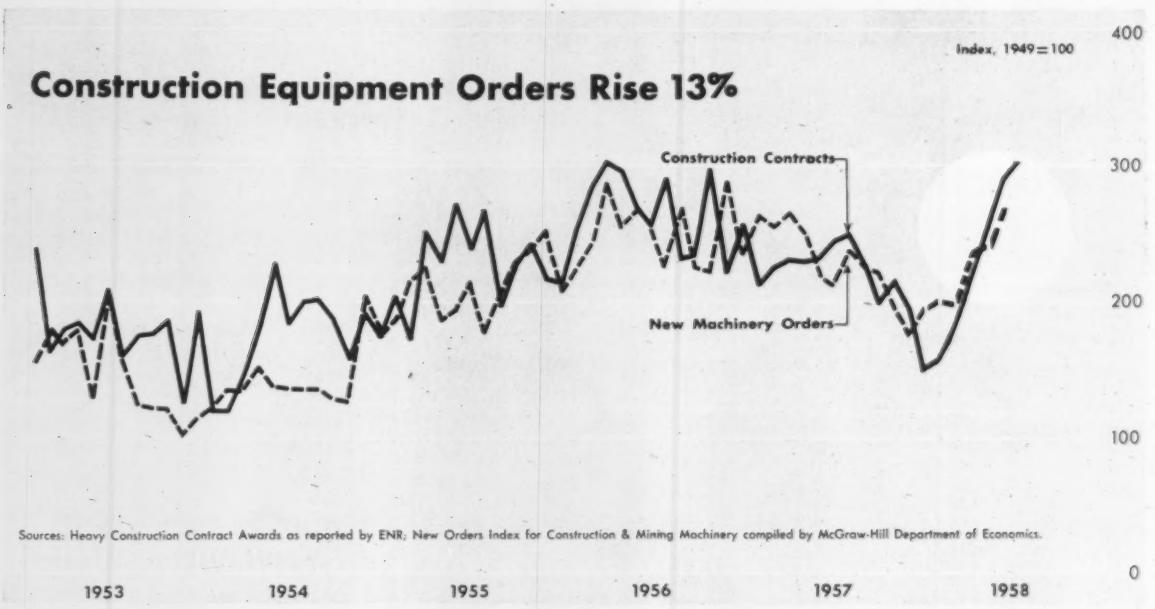
U. S. Plywood Wins Case, Patent Ruled Infringed

A U. S. Court of Appeals has ruled that United States Plywood Corp.'s patent on "Weldtex" striated plywood panel has been infringed since 1955 by Georgia-Pacific Corp. The decision overturned a lower court ruling and ordered an injunction issued against further infringement.

The court also reversed the lower court finding that the patent did not represent actual invention when it was issued in 1942. The patent, issued to Designer Donald Deskey, covers a method of striating plywood panels.

Georgia-Pacific intends to press for a rehearing of its case and, if necessary, will carry its appeal to the U. S. Supreme Court.

(*B&F continued on page 106*)



Construction Equipment Orders Rise 13%

Sources: Heavy Construction Contract Awards as reported by ENR; New Orders Index for Construction & Mining Machinery compiled by McGraw-Hill Department of Economics.

May Volume Best Since March 1956

The sharp recovery of heavy construction contract awards this year, capped by a record-breaking June month, provided the construction machinery business with a sharp boost in business. The New Orders Index for Construction and Mining Machinery climbed to 274 in May (based on 1949 = 100). This is an all-time high for the month and is the greatest volume of machinery orders since March 1956, reports McGraw-Hill Department of Economics.

The 13.2% increase over April was the third consecutive monthly rise for machinery orders. The flood of new business to contractors has compelled them to increase their equipment orders.

At least one company says the machinery business upturn continued into June. Gardner-Denver Co. of Quincy, Ill., reports a sharp upturn in the June volume of new orders. And the biggest increase in sales came in construction equipment.

Total volume through June was $27.7 million, compared with $35.2 million during the same period of 1957.

The company reports, however, that it anticipates substantial improvement in sales during the rest of 1958.

Fast Tax Write-Off Not a Boom Factor

A bigger tax break for buyers of new plants and equipment is a lost cause this year. But a new survey of 500 of the nation's largest industrial companies shows that a five-year write-off provision on capital investment would not significantly increase 1958 spending plans of most companies. However, it also indicates such a law could help stem the slide in spending for new plants.

Some 225 companies responded to the poll conducted by Walter Kidde Constructors, Inc., of New York City and Houston.

These firms have combined 1958 capital budgets topping $5 billion and they account for approximately 16% of estimated capital expenditures in the current year.

Companies were asked what effect a law allowing a five-year tax write-off for new plant and equipment would have on their spending. The firms answered this way: 23% would increase their 1958 budgets, while 77% said they would not increase their 1958 budgets.

However, budgets for 1959 would receive better treatment with such a law—35% of the companies report they would boost capital budgets, and 65% report budgets would not be influenced.

Letters from respondents show that most firms are not interested now in a five-year tax write-off. But many of them did favor more rapid depreciation of capital facilities on a permanent basis.

Often expressed was the thought that a corporation be permitted to establish its own depreciation schedules. And once having established the rate of write-off, it could not be changed.

Although on the shelf for this year, changes in tax laws are not lost forever. Revisions allowing more liberal depreciation charges by industry are high on almost everyone's list. The subject is certain to be revived in 1959.

Such changes, however, apparently would not have been quite as tempting to industry as generally believed. With existing business conditions, many companies facing a dim profit outlook possibly would approach larger depreciation allowances with some caution. Larger depreciation charges do cut the tax bill, but they do so by reducing reported income. Companies that are barely covering their dividends, and particularly those cutting or suspending them, would take a second look at heavier depreciation allowances.

However, companies that are doing well probably would have taken advantage of more liberal laws and continue expansion.

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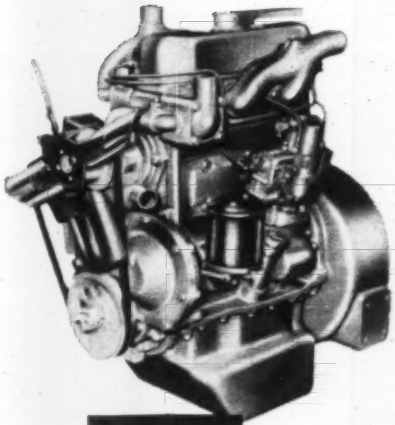
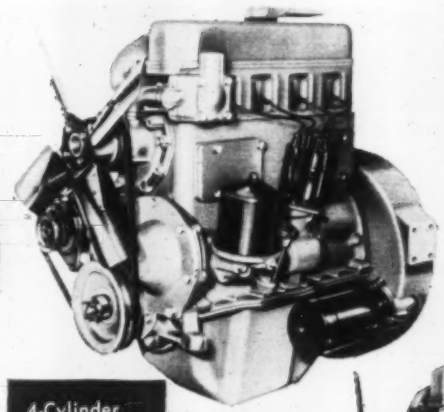


3-Cylinder
Gas or Diesel



4-Cylinder
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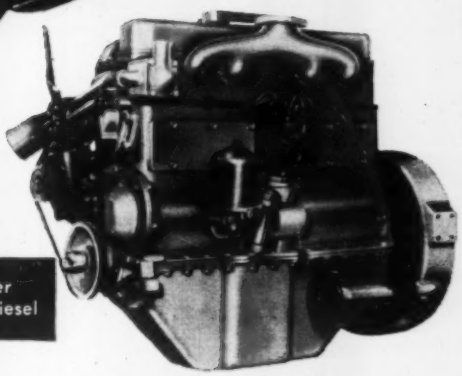

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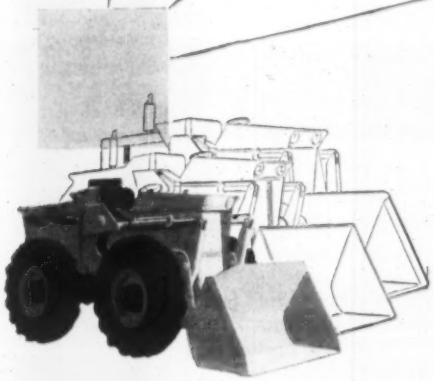

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"Do's and Don'ts" in Hiring Practices

NLRB counsel explains how to avoid legal pitfalls in current attempts to cure hiring hall violations

Contractors and unions in the construction industry have at last received some authoritative, if unofficial, assistance in solving one of their most critical labor problems.

National Labor Relations Board General Counsel Jerome D. Fenton has issued a comprehensive statement that deals with a number of intricate questions posed by the board's mandate to clean up the industry's hiring practices.

To those who have taken the mandate seriously, the statement should prove a helpful guide. To others, it's a sobering indication of the legal risks involved in giving only lip service to the law.

What has Mr. Fenton done? He has started with the premise that discriminatory hiring halls are illegal. And then he has attempted the difficult task of showing how discriminatory hiring halls can be legal.

The key qualification, of course, is that the discrimination forbidden is the kind that encourages union membership or otherwise discriminates against nonunion workers. But within this framework, it's still permissible for unions and contractors to concoct a host of discriminatory hiring standards and qualifications that won't run the risk of illegality.

• **Guides**—Taking Mr. Fenton's discussion as a whole, the basic guides for unions and contractors appear to be these:

A contractor may use a union as an exclusive source of workers if:

• All applicants are referred for employment without reference to their union membership or lack of such membership.

• The employer reserves the right to reject applicants for employment.

• The provisions relating to the hiring arrangement are posted in a place where employees and applicants for employment may read the notice.

The hiring arrangement must be the result of a mutual agreement between the union and the contractor.

The agreement must be reduced to writing.

Although any hiring arrangement, to be valid on its face, must contain the minimal requirements set down by the NLRB, use of the board's exact language (see accompanying box) is not required.

The ban against discrimination applies to hiring arrangements established informally, either orally or by tacit agreement, as well as to those established unilaterally by a union or jointly through collective bargaining.

Preferential hiring arrangements directly or indirectly unrelated to union membership will not destroy the validity of an otherwise valid arrangement. Eligibility for hiring can be based on such things as seniority, skill, previous work with the contractor, place of residence, unemployment history, age, safety record, oral or written examination and apprenticeship training. All of these are matters to be decided through collective bargaining. But such standards must be written into the contract, be clearly defined and be beyond union manipulation or control.

Present restrictions apply even where a contractor recruits only part of his workers through the union. Where a national contractor, operating under a national agreement, recruits part of his work force at the gate and gets the residue from the union, for example, the ban against discrimination applies in the selection of the residue.

A hiring arrangement, valid when established, may be rendered invalid by the manner in which it's operated.

If the illegal operation occurs through union conduct unknown to the contractor, the contractor is still liable for the violation. The law of agency applies. Contractors might devise some way of policing the operation or of protecting themselves against this contingency through collective bargaining.

Members of an employer association, party to a valid hiring arrangement, probably are not liable for violations by one member. Nor would violation by a local union ordinarily attach to the international union, although such liability might accrue in some cases under national agreements.

• **Crux of problem**—This element of uncertainty is inevitable. Any one of several innocent looking standards or requirements may be a device for perpetuating the closed shop situations that the NLRB is now determined to root out and destroy.

Here are some simple examples to which Mr. Fenton refers:

On its face, there's nothing wrong with a referral qualification based on length of residence in a given area if union and nonunion workers are treated alike. But if the geographical area coincides with the union's jurisdiction, the standard could be suspect because the practical result might be discrimination in favor of union members. Mr. Fenton suggests it would be preferable to use the "commonly accepted territorial divisions" as a geographical standard.

A labor contract may set up a valid

Hiring Hall Guides . . .

Here's what NLRB ruled in Mountain Pacific Case

"We believe . . . that the inherent and unlawful encouragement of union membership that stems from unfettered union control over the hiring process would be negated, and we would find an agreement to be nondiscriminatory on its face, only if the agreement explicitly provided that:

• Selection of applicants for referral to jobs shall be on a non-discriminatory basis and shall not be based on, or in any way affected by, union membership, bylaws, rules, regulations, constitutional provisions, or any other aspect or obligation of union membership, policies or requirements.

• "The employer retains the right to reject any job applicant referred by the union.

• "The parties to the agreement post in places where notices to employees and applicants for employment are customarily posted, all provisions relating to the functioning of the hiring arrangement, including the safeguards that we deem essential to the legality of an exclusive hiring arrangement."

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hiring arrangement but elsewhere contain a clause that jeopardizes the legality of the plan. If hiring is entrusted to the foreman and if the contract requires the foreman to be a union member, for example, it might be found that the foreman is required by his union constitution and bylaws to give hiring preference to union members.

Apparently it is not unlawful for a union to insist that reporting time be paid to applicants referred to a job and rejected. But to be above suspicion, the requirement would have to apply to nonunion as well as union members and the amount of pay would have to be small enough not to limit the employer's right of rejection. (Here the basic principle is that a contractor cannot surrender his normal management hiring prerogative to a union.)

It is permissible to require applicants to prove their competency by examination and to allow a municipal license or certificate of apprenticeship completion to be substituted for an examination. But these would be open to legal attack if the union controlled the examination procedure or if licensing or apprenticeship procedures favored union members.

Similar questions can be raised with respect to a host of other standards that Mr. Fenton discusses in his 46-page comment on 29 representative questions. On several of the questions Mr. Fenton suggests one way of minimizing the risk of illegality that may flow from giving the union too much control over the selection of applicants. That is to allow disgruntled applicants a chance to appeal a referral refusal to a joint employer-union board or an impartial third party.

• **The law**—The complex and critical hiring problem now faced by the construction industry grows out of the fact that closed shop practices have flourished in the industry even though they have been outlawed by the Taft-Hartley Act.

The law forbids employers to engage in hiring practices that require or encourage union membership. Despite this prohibition, labor contracts commonly require contractors to get the workers they need from the unions they deal with.

(Except in right-to-work law states, however, workers can be required to become union members 30 days after they are hired. The Kennedy-Ives bill would reduce this waiting period to seven days.)

In clamping down on discriminatory hiring practices in the case known as "Mountain Pacific Chapter of Associated General Contractors," the NLRB said a hiring arrangement "need not explicitly limit employment to union members to be unlawful." In simpler language, this means: Job opportunities in the construction industry must be available to nonunion and to union men on the same terms and conditions. Hiring procedures, including referral standards and employment qualifications, can't be rigged in favor of union members.

The Mountain Pacific Case, however, is only half the story. In February, Mr. Fenton announced that the Brown-Olds reimbursement remedy would be applied against violators after June 1. The deadline has been extended to September 1. Under that doctrine, a contractor and a union are jointly and severally liable for all union dues, assessments and work permit fees collected by the union while operating an unlawful hiring arrangement with the contractor.

• **Qualification**—It is because of the vast importance of the problem and the "substantial efforts" that are being made to conform to the law that Mr. Fenton took the unprecedented step of commenting unofficially on various phases of the problem.

But he issued this word of caution: "These comments are not in any sense advisory opinions or rulings, nor are they binding or authoritative determinations either by the Office of the General Counsel or the Board. Furthermore, these comments should not be considered by employers or unions or other interested parties as approval or disapproval of any particular form of lawful hiring arrangement."

New Strike Hits the West, Roofers Settle in Chicago

Surprise strike action by a local of the operating engineers union crippled millions of dollars worth of construction projects in Oregon and southwest Washington last week. In Chicago, a 25-day roofers' strike was settled, while another union—a plastic and metal tile local of the bricklayers—agreed to "hold the line" on wages for a year.

Hiring hall and featherbedding practices have been critical factors in the contract negotiations.

The Associated General Contractors has indicated that a union demand for hiring hall procedures unacceptable to the contractors is a principal issue in the long negotiations with the engineers.

And in Chicago, where the roofers agreed to accept 43 cents in wages and fringe benefits in a two-year contract, contract talks still continue on featherbedding. Said one contractor: "Now we're forced to talk about it and we expect to get something from our discussions."

The wage freeze undertaken voluntarily by the tile layers is attributed to economic conditions and a bid for union prestige.

Employment Rises

Number on construction payrolls continues to climb for fourth month

Employment in the construction industry scored another handsome gain in June. The government's employment report released last week showed that the number of workers on contract construction payrolls increased more than seasonally in June for the fourth month in a row.

Industry employment totalled 2,835,000 in the month—an increase of 155,000 from May.

Total U. S. employment rose only 900,000 to hit 65 million. This increase was a little disappointing, but was explained as being held down because of bad weather affecting agriculture.

The big thing in the report, however, was that employment manufacturing rose more than seasonally in June. This was the first such rise in the hard-hit manufacturing sector in 18 months. Total manufacturing employment rose 156,000 for the month. The factory work week climbed at the same time to 39.2 hours.

Unemployment, after declining two months in a row, jumped back up 500,000 to hit a 17-year high. This is attributed to the influx of students who left their classrooms and entered the labor force.

But this increase was not nearly as great as had been expected only a month ago, when it was forecast that unemployment might hit 6 million in June. On a percentage basis, unemployment actually decreased from 7.2% to 6.8% of the labor force, reflecting the pickup in general business activity.

While construction employment showed impressive gains, it still was 180,000 below a year ago. But Labor Department officials feel that industry employment may get back to year-ago levels this month because of the generally favorable short-term outlook for construction.

Building construction appears in a strong position, but highway construction is a little disappointing. Highway employment is gaining, but not as much as anticipated.

Featherbedding Gets New Twist

Contractors faced with union featherbedding demands often find themselves between the devil and the deep blue sea.

Take a request that men be placed on nonexistent jobs, for example. Neither the law nor labor's own anti-featherbedding code afford sure or positive relief. But if the featherbedding action can be converted to a jurisdictional dispute, then the road to legal relief may be easier.

This was demonstrated by a recent National Labor Relations Board decision. NLRB dismissed an unfair labor practice charge filed against a local of the electrical workers union by Associated Engineers, Inc., and the Mechanical Contractors Association of New Jersey. The charge stemmed from union efforts to compel the unnecessary hiring of an extra man to maintain an electric welding machine on a school construction job.

The board's dismissal was based on the fact that the contractors had attempted to beat the featherbedding demand by resorting to Taft-Hartley Act provisions relating to jurisdictional disputes when no jurisdictional dispute existed in a legal sense.

• **The case**—The dispute started when Associated asked an electrical subcontractor to hook up the electric welding machine. The union had a labor contract with the sub containing a clause that required a union stand-by maintenance man on such machines. It refused to hook up the machine unless a man was hired to maintain it. Because an electric welding machine needs no on-the-job maintenance, Associated declined to capitulate.

Associated filed an unfair labor practice charge against the union. In doing so, it regarded the union refusal to hook up the machine as an attempt to force a work assignment in its favor. Such a refusal is a violation of the Taft-Hartley ban against jurisdictional work stoppages.

But the NLRB said the approach was wrong. It said Associated was merely a third party to the union's dispute with the sub, and that no work assignment had been made on the maintenance question. Accordingly, the dispute did not "involve reassignment of any work from one employee to another"—the core of a jurisdictional dispute and the board had no authority to entertain it.

The result adds up to the fact that the contractor might have won its suit by framing a jurisdictional dispute. This perhaps could have been done when the machine was first installed by making a definite work assignment of maintenance work to the craft member charged with operation of the machine. The labor dispute then would have involved a reassignment of work.

• **Some questions**—In addition to the tactical problem, the case also raises these specific questions:

• Is the Taft-Hartley ban on featherbedding effective? The answer seems to be "no." Here, the contractors avoided this approach and the board made no allusion to it—although it did say that an "electric welding machine rarely needs maintenance," that its maintenance is not "an on-the-spot or field job" and that a maintenance man is "unneeded."

What the law bans is a union effort to compel an employer to pay "for services that are not performed." A man who stands by waiting for something to happen may be performing a service. The burden of proof in a legal sense is difficult and easily scares contractors away. In a case like this, the mere fact that the sub had agreed to a maintenance clause is a substantial hurdle, even though a maintenance man may be unnecessary.

• Is the AFL-CIO Building and Construction Trades Department's policy statement on work practices—commonly called "Ten Commandments"—helpful? Again the answer seems to be "no," even though the Associated case arose before the code was issued.

Section 2 of the code, for example, indicates that Associated did have a jurisdictional dispute within the language of the trade and that the maintenance claim was not legitimate. It says the "welding torch is a tool of the trade having jurisdiction over the work being welded."

But the code is a statement of policy, not of law. It has no enforcement machinery and has little application at the local level unless and until it is accepted by local unions.

A spokesman for the New Jersey Mechanical Contractors calls it a "clear-cut policy that will lead to worse confusion" and says it's bound to be more widely "fractured" than the Biblical Ten Commandments.

Despite the delays and extra costs incurred in the Associated case, however, something was accomplished. The contractors did get the dispute aired in a Section 10(k) jurisdictional disputes hearing before the case was dismissed and they think the union will no longer push its claim.

OFFICIAL PROPOSAL

Bids: July 30, 1958

Advertisement for Bids
City of Binghamton, New York
Construction of
Sewage Treatment Plant

NOTICE IS HEREBY GIVEN that sealed proposals will be received by the Board of Contract and Supply for:

CONTRACT NO. 1
GENERAL CONSTRUCTION

The work to be performed under this Contract provides for the general construction of a primary sewage treatment plant. The work includes the following principal features:

(a) Head house consisting of a brick faced masonry superstructure on a concrete substructure. The head house will house the administrative offices, laboratory, main pumping station, sewage screens, sludge filtering equipment, chemical storage space, garage and shop.

(b) Two concrete grit removal chambers equipped with mechanical scrapers, and a grit house for housing the grit washing equipment.

(c) Chlorine feed house for housing the chlorinating equipment, with adjacent facilities for storing chlorine containers.

(d) Concrete settling basins, with facilities for mechanical removal of scum and sludge. Appended to this structure is the raw sludge pumping station and the chlorine contact tank.

(e) Two sludge digester tanks between which is located a sludge control building. The tank walls will be constructed of brick faced prestressed reinforced concrete, with a steel frame roof and will contain the necessary sludge digestion equipment. The control building will be of similar construction as the head house, and will house the sludge digestion control equipment.

(f) Approximately 650 feet of concrete pipe interceptor sewer together with manholes and regulator chamber.

(g) All operating equipment and facilities shown on the Drawings, and specified, except that plumbing, heating and ventilating and electrical work will be provided for under other contracts.

(h) All related work, including grading, planting, paving, and other miscellaneous work.

Sealed bids for the above described work will be received by the office of the Board of Contract and Supply, in the Council Chambers, City Hall, Binghamton, New York until 10:30 A.M. (EDST) on July 30, 1958, at which time and place said proposals will be opened and read aloud.

Drawings, Specifications, Instructions to Bidders, Proposal and forms of Proposal Bond, Contract and Performance Bond may be examined at the office of the Board of Contract and Supply, City Hall, Binghamton, and at the office of Parsons, Brinckerhoff, Hall & Macdonald, Engineers, Sanitary Department, Room 602, 55 Broadway, New York, New York. Copies may be obtained at the office of Parsons, Brinckerhoff, Hall & Macdonald, Engineers and at the office of the Board of Contract and Supply upon deposit of twenty-five dollars, which sum will be refunded upon return of the Drawings and Specifications in good condition within sixty (60) days after the opening of Bids.

Proposals must be submitted on the Form furnished by the City and shall be accompanied by a Bid Security in the form of an acceptable proposal bond or a certified check in an amount not less than five percent (5%) of the total Bid. Said deposit will be held by the City subject to the requirements set forth in the Information for Bidders.

The successful Bidder will be required to furnish a satisfactory Performance Bond in the amount of One Hundred percent (100%) of the accepted bid.

The Board of Contract and Supply reserves the right to reject any or all bids and to waive any informalities therein.

William G. Emmons
Board of Contract & Supply
City of Binghamton
By: William Emmons, Secretary

Dated July 2, 1958

OFFICIAL PROPOSALS

Bids: August 12, 1958.

Project U-26-1 (7)
North Expressway State Road No. 26
(Villamil Street to Intersection No. 5 Section)
Municipality of San Juan, Puerto Rico

COMMONWEALTH OF PUERTO RICO
DEPARTMENT OF PUBLIC WORKS
BUREAU OF HIGHWAYS
ADVERTISEMENT
July 6, 1958

The Board of Awards of the Department of Public Works of Puerto Rico, 1507 Ponce de León Avenue, Santurce, Puerto Rico, will receive sealed proposals for the construction of Project U-26-1 (7) NORTH EXPRESSWAY State Road No. 26, Municipality of San Juan, Puerto Rico.

Bidders shall submit their proposals at the office of the Board of Awards, 1507 Ponce de León Avenue, Santurce, Puerto Rico, until 2:00 P. M. (Puerto Rico time) on August 12, 1958, at which time and place said proposals will be publicly opened and read aloud.

The work to be performed is divided into two (2) parts.

Part I—Dry or Hydraulic Fill. Construction of an embankment with dry or hydraulic fill 0.695 Miles long and drainage structures.

Principal items for the dry fill are 134,725 cubic meters excavation of unsuitable material, and 328,970 cubic meters dry fill of which 128,000 CuM will be extra compacted.

Principal items for the hydraulic fill (Alternate for Dry Fill) are 387,900 cubic meters excavation of unsuitable material and 368,290 cubic meters of hydraulic fill.

Part II—Grading and drainage, approximate length 0.366 miles. Paving, 1.061 miles, of four lane divided expressway with frontage roads, including also the construction of an 18.00M reinforced concrete wharf, a 31.00M continuous reinforced concrete overpass and highway lighting.

Plans, specifications, instructions to bidders, and all necessary information may be obtained from the office of the Procurement and Contract Division, Department of Public Works, 1507 Ponce de León Avenue, Santurce, Puerto Rico, upon a deposit of EIGHTY ($80.00) DOLLARS in cash, money order or certified check payable to the Secretary of the Treasury of Puerto Rico until 96 hours prior to the opening of bids. The full amount of the deposit will be refunded to each depositor upon the return of the plans in good condition within twenty (20) days after the opening of bids.

Each proposal must be accompanied by a provisional bond in the amount set forth below in any of the forms indicated in the General Conditions.

Part I—Fifty thousand ($50,000.00) Dollars

Part II—Forty thousand ($40,000.00) Dollars

The Board of Awards reserves the right to accept any bid or to reject any or all bids and to award contract under the conditions found most favorable to the Commonwealth of Puerto Rico.

Roberto Sánchez Vilella
Secretary of Public Works

Bids: August 15, 1958

Request for Bids
For Construction of Railroad Bridge

Sealed proposals will be received at the office of Wm. J. Hedley, Chief Engineer, Wabash Railroad Company, Railway Exchange Building, St. Louis 1, Missouri, until 12 Noon (C.S.T.) on the 5th day of August, 1958, for constructing the substructure and superstructure of a double track railroad bridge, 520 feet long, over the Calumet Sag Channel near Palos Park, Illinois. Plans, specifications and other information concerning this project can be obtained from the office of the Chief Engineer, Wabash Railroad Company, 1402 Railway Exchange Building, St. Louis 1, Missouri, upon payment of $10.00 per set.

Contractors Watch This Section—

for new projects. Publish your announcements through the proposal sections of *Engineering News-Record* and get their bids.

OFFICIAL PROPOSALS

Bids: July 22, 1958.

Power Authority of the State of New York

NIAGARA POWER PROJECT
ADVERTISEMENT FOR PROPOSALS
FOR
THE FURNISHING AND DELIVERY
OF
115 kv AND 230 kv
POWER CIRCUIT BREAKERS
FOR
NIAGARA SWITCHYARD
SPECIFICATIONS NO. PA-N-25016
NIAGARA CONTRACT NO. NP20

NOTICE TO CONTRACTORS: The POWER AUTHORITY OF THE STATE OF NEW YORK will receive sealed proposals for the furnishing and delivery thereof f.o.b. Niagara Switchyard Area, University Siding, Niagara Falls, New York, of 115 kv and 230 kv power circuit breakers for the Niagara Switchyard in Lewiston, Niagara County, New York until 10:30 A.M. Eastern Daylight Saving Time on the 22nd day of July 1958, at the Authority's Office, 18th floor, The Coliseum Tower, 10 Columbus Circle, New York 19, New York, at which time and place proposals will be publicly opened and read aloud.

Bids will be received for 58, 34, or 24, power circuit breakers and associated equipment in accordance with the bidding schedules.

Delivery of the power circuit breakers will be required beginning on or before August 1, 1959.

Plans, Specifications, and Proposal Forms for the work, may be obtained from the Power Authority of the State of New York, 18th Floor, The Coliseum Tower, 10 Columbus Circle, New York 19, New York, upon application and prepayment of a fee of Ten Dollars ($10.00) per initial set of contract documents, and Five Dollars ($5.00) per set for additional sets, no part of which will be refunded. Plans, Specifications, and Proposals Forms for the work will be on file in the Authority's Office and in the offices of the Engineer, Uhl, Hall & Rich, 230 Congress Street, Boston 10, Massachusetts, and may be inspected by prospective bidders during office hours.

Bids must be made and returned in duplicate in accordance with instructions contained in the Information for Bidders. Guarantee will be required with each bid in an amount not less than 20 per cent of the maximum price bid for any bid schedule.

The right is reserved to reject any or all bids.

W. S. CHAPIN
GENERAL MANAGER

Bids: August 7, 1958

Project F-2-4 (6) Aguadilla By Pass
Municipality of Aguadilla, P. R.

COMMONWEALTH OF PUERTO RICO
DEPARTMENT OF PUBLIC WORKS
BUREAU OF HIGHWAYS
ADVERTISEMENT
July 6, 1958

The Board of Awards of the Department of Public Works of Puerto Rico, 1507 Ponce de León Avenue, Santurce, Puerto Rico, will receive sealed proposals for the construction of 6.027 Kms. of Project F-2-4 (6) AGUADILLA BY PASS State Road No. 2, Municipality of Aguadilla, Puerto Rico.

Bidders shall submit their proposals at the office of the Board of Awards, 1507 Ponce de León Avenue, Santurce, Puerto Rico until 2:00 P. M. (Puerto Rico time) on August 7, 1958 at which time and place said proposals will be publicly opened and read aloud.

Principal items are 872,800 CuM unclassified excavation; 172,800 CuM selected borrow material; 35,100 CuM caliche base course; 65,000 SqM concrete pavement and 7,900 Tons dense graded hot plant mix, Class E, Type F-1, and two continuous reinforced concrete overpasses, over all length 0.050 miles.

Plans, specifications, instructions to bidders, and all necessary information may be obtained from the office of the Procurement and Contract Division, Department of Public Works, 1507 Ponce de Leon Avenue, Santurce, Puerto Rico upon a deposit of ONE HUNDRED ($100.00) DOLLARS in cash, money order or certified check payable to the Secretary of the Treasury of Puerto Rico until 96 hours prior to the opening of bids. The full amount of the deposit will be refunded to each depositor upon the return of the plans in good condition within (20) days after the opening of the bids.

Each proposal must be accompanied by a provisional bond in the amount of ONE HUNDRED FIFTY THOUSANDS ($150,000.00) DOLLARS in any of the terms indicated in the General Conditions.

The Board of Awards reserves the right to accept or reject any or all bids and to award contract under the conditions found most favorable to the Commonwealth of Puerto Rico.

Roberto Sanchez Vilella
Secretary of Public Works

Bids: August 14, 1958

Notice to Bidders
Hurleyville Water District
Town of Fallsburgh, New York

1. Sealed proposals for Contracts 2, 3 and 4 for Construction of a Water Supply System in or near the Hurleyville Water District, Town of Fallsburgh, New York, will be received by the Town Board in the Town Clerk's Office, South Fallsburg, N. Y. until 2:00 P.M. E.D.S.T., on August 14, 1958, and there publicly opened and read immediately thereafter.
2. The work of the various contracts is as follows: Contract 2, constructing two Well Houses, Standpipe Foundation and Electrical Work; Contract 3, constructing 350,000 Gallon Steel Standpipe; Contract 4, constructing 27,300 lin. ft. of 6", 8" and 10" asbestos cement water mains with hydrants, valves and house services.
3. Plans, Specifications, Bidding and Contract Documents may be examined at the Town Clerk's Office, and at the Office of the Consulting Engineer, Alexander Potter Associates, 50 Church Street, New York 7, N. Y., and there be obtained upon a Deposit of Ten ($10.00) Dollars Per Set.
4. Full refund will be made to actual bidders for return of One (1) Set in good condition within two weeks after the closing date for receipt of bids; refund for return of all other sets in good condition, by actual bidders, within the same period, will be Fifty (50%) Percent of the Deposit.
5. All proposals must be on the form contained in the Specifications.
6. All bids must be accompanied by a Certified Check in the amount of Ten (10%) Percent of the amount of the Bid, made payable to the Town of Fallsburgh. Said checks will be refunded to all, except the two lowest bidders, not later than ten (10) days after opening of bids.
7. The successful bidder will be required to furnish a Performance Bond conditioned upon the faithful performance of the Contract, and upon the payment of all persons supplying labor, and furnishing materials on the construction of the work.
8. No bidder may withdraw his Bid within Thirty (30) Days after closing date for receipt of Bids.
9. The Town Board reserves the right to reject any or all bids and to waive any informality in the bid, and to accept that proposal which, in its judgment, best serves the interests of the Town.

TOWN BOARD OF THE TOWN
OF FALLSBURGH, NEW YORK
Mortimer Michaels, Supervisor

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-5078) will be received at Fargo, North Dakota until 10 a.m. Central Standard Time, August 12, 1958, for furnishing labor and materials for relocating part of Devils Lake-Carrington 115-kv transmission line, North Dakota, Missouri River Basin Project. Location near Devils Lake, North Dakota. Principal items are 12,000 cu. yds. excavation from borrow; 3,240 lin. ft. furnishing treated timber piles 45 feet in length; furnishing and erecting steel towers; and other work. Completion time 210 days. For particulars, address Bureau of Reclamation, P. O. Box 2553, Billings, Montana; P. O. Box 1993, Fargo, North Dakota; or Building 53, Denver Federal Center, Denver 2, Colorado. W. A. Dexheimer, Commissioner.

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-5080) will be received at Denver, Colorado until 2 p.m. Mountain Standard Time, July 31, 1958, for furnishing labor and materials for rewinding the armature of an existing 75,000-kva, 13,800-volt, 138.5-rpm, vertical-shaft generator at Shasta Powerplant, Central Valley Project, California. Location near Redding, California. Completion time 120 calendar days. For particulars, address Bureau of Reclamation, P. O. Box 471, Redding, California; or Building 53, Denver Federal Center, Denver 2, Colorado. W. A. Dexheimer, Commissioner.

OFFICIAL PROPOSALS

Bids: August 7, 1958

New York State Road Work

NOTICE TO CONTRACTORS: STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of the Highway Law, Canal Law, and special provisions for projects financed with Federal Aid Funds, sealed proposals will be received until ten-thirty o'clock A.M., advanced standard time, which is nine-thirty o'clock A.M., eastern standard time, on the 7th day of AUGUST, 1958, by Henry A. Cohen, Director, Bureau of Contracts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., for the following Projects:

County	Contract No.	Name	Miles	Type	Deposit	Estimated Cost of Work
DISTRICT No. 2, L. KETCHUM, District Engineer, 109 No. Genesee Street, Utica 1, New York						
Montgomery	US 98	Lock 16 Erie Canal Near St. Johnsville	.....	Furnishing & Installing 2 Lock Gates & Lowering Sills	5% of Bid Plans $10	Confidential
Oneida (Rte. 49)	FARC 58-98	Mohawk River Road Marcy, S.H. 296 Project DF DU 518(5)	2.27 (0.66 Acc.)	9" Cem. Conc. Pavt. 2 @ 24' Wide = 2.18 Mi. Asph. Conc. Ty. 1A = 0.66 Mi. Misc. Work = 0.09 Mi.	$70,000 Plans $5	$1,211,000
DISTRICT No. 3, E. E. TOWLSON, Acting District Engineer, 333 E. Washington Street, Syracuse, New York						
Onondaga	FIC 58-13	Interstate Route Connection No. 570 (City of Syracuse: State Fair Boulevard) Project I 1139(2)	1.25 (0.84 Acc.)	Electrical Lighting Facilities	$4,500 Plans $2	83,000
Oswego (Rtes. 11, 3, 126, 104, 49, 13	RC 58-92	Twenty Two Various State Highways in District No. 3	.....	Roadside Development	$500 No Plans Prop. Only $2	9,000
DISTRICT No. 5, E. G. H. YOUNGMANN, District Engineer, State Office Bldg., 65 Court Street, Buffalo 2, New York						
Erie (Rte. 130)	FAGC 58-12	City of Buffalo: Broadway Arterial Highway (N.Y.C. R.R. & D.L. & W. R.R. Grade Separations Project UG 285(3)	0.39	9" Cem. Conc. Pavt. 2 @ 30' Wide R.R. Sep. I Beam 117.5' Variable R.R. Sep. Pl. Girder 92.5'	$128,000 Full Size Plans $50	2,335,000
Niagara	PSC 6607	Elimination of Grade Crossings of New York Central Railroad & The Erie Railroad With Roads & Streets in City of Niagara Falls	5.12 (0.94 Acc.)	R.R. Relocation = 5.12 Mi. Cem. Conc. Pavt. = 0.59 Mi. Asph. Conc. = 0.25 Mi. Grav. & Bit. Mac. = 0.10 Mi. 4 Hy. Seps. Pl. Gird. 115.7', 77.2', 112.8' & 149.8' 1 Reinf. Conc. Arch Br. 30'	$205,000 Plans $10	3,747,000
Niagara	FASS 58-8	Robinson Road Pt. 2, Co. Rd. 123 Project S 528(1)	1.02	Asph. Conc. = 0.94 Mi. Misc. Work = 0.08 Mi.	$11,000 Plans $2	192,000
DISTRICT No. 6, J. H. THOMAS, District Engineer, State Office Bldg., 30 West Main Street, Hornell, New York						
Steuben (Rte. 17)	TC 58-1	Corning Painted Post, S.H. 5026 (Centerville Road Intersection)	0.03	Traffic Signal	$600 Plans $2	10,000
DISTRICT No. 7, R. W. SWEET, District Engineer, 144 Van Duzee Street, Watertown, New York						
Jefferson (Rte. 12E)	FARC 58-103	Cape Vincent Watertown, Pt. 2, S.H. 1164 Project F 565(3)	1.51	Asph. Conc. Ty. 1A = 1.45 Mi. Misc. Work = 0.06 Mi. Comp. W. F. Beam Br. 507.8' Precast Conc. Beam Br. 32.2'	$60,000 Plans $5	1,120,000
DISTRICT No. 8, K. G. RAUER, District Engineer, Pleasant Valley Road, Poughkeepsie, New York						
Orange (Rte. 17)	FARC 58-94	Tuxedo Harriman Pt. 2, S.H. 8256 Central Valley Turners, S.H. 115 Project DF 405(8)	4.51	Asphalt Concrete	$25,000 Plans $2	458,000
Orange (Rte. 9W)	FARC 58-99	Balmville Newburgh, S.H. 1538 Newburgh Cedar Hill Cemetery, S.H. 5007 Project DF 357(10)	2.84	Asphalt Concrete	$9,300 Plans $2	168,000
Orange (Rte. 293)	FARC 58-95	West Point Central Valley S.H. 5328, 5328A, 5328B Project S DA	3.81	9" Cem. Conc. Pavt. 22' Wide = 3.67 Mi. Misc. Work = 0.14 Mi. Reinf. Conc. Arch Bridge 22'	$73,000 Full Size Plans $15	1,338,000
Orange, Ulster & Westchester (Rtes. 94, 17K, 9W, 312, 55, 212, 100, 22, 6)	RC 58-96	Br. No. 1 S.H. 154; Br. No. B 1 S.H. 576; Br. No. B 3 S.H. 8500; Br. No. B 1 S.H. 8536; Br. No. B 2 S.H. 8536; Br. No. 1 S.H. 602; Br. No. 2 S.H. 603; Br. No. 3 S.H. 1882; Br. No. 1 S.H. 1324; Br. No. B 2 S.H. 5298A; Br. No. 1 S.H. 3297	.....	Cleaning & Painting 11 Bridges	$1,100 Plans $2	21,000
Westchester (Rte. 118)	FARC 58-97	Pines Bridge Yorktown Heights, S.H. 148 Yorktown Heights Putnam County Line, S.H. 149 Project DS 150(2)	0.94	9" Cem. Conc. Pavt. 24' Wide = 0.92 Mi. Misc. Work = 0.02 Mi.	$17,000 Plans $2	299,000
Westchester (Rtes. 9, 22, 120)	RC 58-100	Various State Highways on Route 9 (Yonkers to Croton River Bridge) Route 22 (Mount Vernon to Putnam County Line) and Route 120 (Purchase St. to Lake St.)	.....	Roadside Development	$1,100 Plans $2	20,000
DISTRICT No. 9, JOSEPH C. FREDERICK, District Engineer, 71 Frederick Street, Binghamton, New York						
Broome (Rte. 7)	FARC 58-102	Tunnel, S.H. 266 Sanitaria Springs Harpursville, S.H. 5243 Project DF 496(12)	5.32	Asphalt Concrete	$65,000 Plans $3	1,205,000
Sullivan (Rte. 17)	FARC 58-104	Monticello Liberty Pt. 1, S.H. 5035 Monticello Liberty Pt. 2, S.H. 5322 Liberty County Line Pt. 1, S.H. 5223 Liberty Village, S.H. 5296 Project F 495(12), F 336(19)	8.11 (8.97 Sh.)	Bit. Mat. Treated Shoulders = 8.97 Mi. 9" Cem. Conc. Pavt. 2 @ 24' Var. Wide = 8.05 Mi. Misc. Work = 0.06 Mi. 2 Brs. Reinf. Conc. Boxes 32' & 26.5' 1 Br. Twin Corrug. Pl. Pipe Arch 23' 6 Hy. Seps. Comp. W.F. Beams 201.8', 130.5'; 285', 232', 222' & 58.1'	$550,000 Full Size Plans $100	9,910,000
DISTRICT No. 10, M. E. GOUL, District Engineer, 325 W. Main Street, Babylon, L. I., New York						
Bronx	FICBE 58-4	Interstate Route Conn. No. 511 Cross Bronx Expressway (Cont. 5) (Walton Ave. to Clay Ave.) Project I 1084(32)	0.60	9" Cem. Conc. Pavt. With Carb. Black, Var. Wide = 0.47 Mi. Misc. Work = 0.13 Mi. (Access Rd. Pavt. = 19,300 S.Y. Sheet Asph. 4,800 S.Y. Cem. Conc. Pavt. & 400 S.Y. Granite Block Pavt.) 5 Hy. Seps. Steel Rigid Frames 122', 88.7', 100.7', 101' & 123.8' 1 Girder & Column Underpass 87' x 303.2' Long	$650,000 Plans $20	11,788,000
Kings	FIGE 58-1	Interstate Route Conn. No. 512 Gowanus Expressway, Cont. 1 (3rd Ave. 39th St. to 60th St.) Project I 1066(23)	1.05	Demolition of Buildings	$50,000 Plans $2	912,000
New York	FAHRD 58-2	Harlem River Drive (Cont. 141B: E. 133rd St. to E. 135th St.) Project DF 1133(1)	0.08	Reinf. Conc. Bulkhead Wall	$21,000 Full Size Plans $10	382,000
Suffolk (Rte. 25)	FARC 58-93	Port Jefferson Riverhead, Pt. 3, S.H. 8066 Project DF 83(10)	3.31	Asphalt Concrete	$19,000 Plans $2	350,000

Any projects in this letting that are on the Federal Aid highway systems are subject to the provisions of the "Federal-Aid Highway Act of 1956", being Public Law 627, 84th Congress, approved June 29, 1956, and are also subject to the applicable New York State statutes.

In compliance with the provisions of Section 115 (Prevailing Rate of Wage) Public Law 627, the minimum wages to be paid laborers and mechanics are included in wage schedules that are set out in the bid proposal.

Maps, plans, specifications and proposal forms may be seen and obtained at the office of the State Department of Public Works, Bureau of Contracts, Albany, N. Y., and at the office of the District Engineers noted above, and may also be seen at the office of the State Department of Public Works, 270 Broadway, New York City.

The deposit for Plans and Proposal Forms for each contract is indicated above. A refund will be made in full to bidders for return of one set, in good condition, within 30 days of award, or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

Special attention of bidders is called to "Information for Bidders" in the Public Works Specifications, and to the special provisions applying to projects financed with federal funds. Award of a contract is subject to priorities and allocations under the Defense Production Act of 1950, as amended, and all regulations issued thereunder.

Proposal for each contract must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum as specified in the advertisement and the proposal. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Laws, as set forth in "Information for Bidders".

The right is reserved to reject any or all bids.

JOHN W. JOHNSON
SUPT. OF PUBLIC WORKS

OFFICIAL PROPOSALS

Bids: August 14, 1958

Notice to Bidders
Rahway Valley Sewerage Authority
Union & Middlesex Counties, New Jersey

OUTFALL SEWER

Contract No. 5—Outfall Sewer—Section "B" Sealed proposals for Contract No. 5 involving construction of Section "B" of the Outfall Sewer for the Rahway Valley Sewerage Authority will be received at the meeting place of said Authority, the Westfield Municipal Building, Westfield, New Jersey, until eight o'clock P. M. (8:00 P. M.) Prevailing Time on Thursday, August 14, 1958, and at that time and place will be publicly opened and read aloud. The proposals shall be in accordance with specifications, drawings, terms of the proposed contract, and form of bond on file with the Authority. Contract No. 5, Outfall Sewer, Section "B" involves the construction of approximately 13,500 feet of 66-inch outfall sewer, complete with all appurtenances.

No bids will be received unless made in writing on forms furnished, and unless accompanied by a certified check made payable to the Rahway Valley Sewerage Authority for an amount not less than ten (10) per cent of the amount of the base bid. Bidders shall enclose as part of their sealed proposal a statement of commitment by a corporate surety company authorized to do business in New Jersey that such company will underwrite and issue to the Rahway Valley Sewerage Authority a performance bond in statutory form in behalf of the contractor.

Bidders are notified that they will be required to furnish a standard form of questionnaire and financial statement containing a complete statement of the bidder's ability, financial standing and experience in performing work of the type contemplated, before such bidder can be furnished plans and specifications. The Authority, through its Engineers, may refuse to furnish such bidder whose statement is unsatisfactory, with plans and specifications.

The Rahway Valley Sewerage Authority reserves the right to reject any or all bids, and to accept that one which, in its judgment, best serves its interests.

Plans and specifications may be seen at the Authority sewage treatment plant, East Hazelwood Avenue, Rahway, New Jersey. They may be obtained at the Office of the Consulting Engineer, Elson T. Killam Associates, Inc., 48 Essex Street, Millburn, N. J., upon payment of $15 for each set. The deposit will be returned only to Contractors submitting bona fide proposals who return the plans and specifications in good condition within ten (10) days after opening of bids.

By Order of the Rahway Valley Sewerage Authority
W. Edward Richards,
Secretary-Treasurer

Contr. #5 R

Bids: August 14, 1958

Notice to Bidders
Rahway Valley Sewerage Authority
Union & Middlesex Counties, New Jersey

OUTFALL SEWER

Contract No. 4—Outfall Sewer—Section "A" Sealed proposals for Contract No. 4 involving construction of Section "A" of the Outfall Sewer for the Rahway Valley Sewerage Authority will be received at the meeting place of said Authority, the Westfield Municipal Building, Westfield, New Jersey, until eight o'clock P.M. (8:00 P.M.) Prevailing Time on Thursday, August 14, 1958, and at that time and place will be publicly opened and read aloud. The proposals shall be in accordance with specifications, drawings, terms of the proposed contract, and form of bond on file with the Authority. Contract No. 4, Outfall Sewer, Section "A", involves the construction of approximately 2700 feet of 66-inch outfall sewer, complete with all appurtenances.

No bids will be received unless made in writing on forms furnished, and unless accompanied by a certified check made payable to the Rahway Valley Sewerage Authority for an amount not less than ten (10) per cent of the amount of the base bid. Bidders shall enclose as part of their sealed proposal a statement of commitment by a corporate surety company authorized to do business in New Jersey that such company will underwrite and issue to the Rahway Valley Sewerage Authority a performance bond in statutory form in behalf of the contractor.

Bidders are notified that they will be required to furnish a standard form of questionnaire and financial statement containing a complete statement of the bidder's ability, financial standing and experience in performing work of the type contemplated, before such bidder can be furnished plans and specifications. The Authority, through its Engineers, may refuse to furnish such bidder whose statement is unsatisfactory, with plans and specifications. A minimum period of two weeks should be allowed for review and approval of qualification before plans are issued.

The Rahway Valley Sewerage Authority reserves the right to reject any or all bids, and to accept that one which, in its judgment, best serves its interests.

Plans and specifications may be seen at the Authority sewage treatment plant, East Hazelwood Ave., Rahway, N. J. They may be obtained at the Office of the Consulting Engineer, Elson T. Killam Associates, Inc., 48 Essex St., Millburn, N. J., upon payment of $15.00 for each set. The deposit will be returned only to Contractors submitting bona fide proposals who return the plans and specifications in good condition within (10) days after the opening of bids.

By Order of the Rahway Valley Sewerage Authority
W. Edward Richards, Secretary-Treasurer

Bids: July 24, 1958.

Advertisement
The Port of New York Authority

PORT AUTHORITY GRAIN TERMINAL
DREDGING
CONTRACT GT-140,001

Sealed proposals for dredging at the Port Authority Grain Terminal at Gowanus Bay, Brooklyn, N. Y., will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 Eighth Avenue, New York 11, N. Y., until 2:30 P.M. on Thursday, July 24, 1958, at which time said proposals will be opened and read in Room 1108.

Contract documents may be seen at the office of the Engineer of Design of the Authority, Room 1115. Documents will be furnished upon deposit of $30.00 per set for not more than three sets to any one company (each set including one copy of the contract drawing). Additional sets will be furnished upon payment of $30.00 per set, which payment is not returnable. Deposits and payments shall be delivered to the Treasury Department, Room 1001, where a receipt will be issued. The receipt shall be delivered to Room 1115, where the documents will be furnished.

Those who have submitted a bid on the contract will receive a refund of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals. Those who have not submitted a bid will receive a refund of one-half of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Donald V. Lowe, Chairman

New York, July 17, 1958

Bids: August 7, 1958

Contract M 58-9 for Cleaning and Painting Bridge E-2, Fourth St. Bridge in Waterford, Saratoga County, N. Y.

STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of the Canal Law and Highway Law, sealed proposals will be received, until 10:30 A.M., D. S. T. on August 7, 1958 by Henry A. Cohen, Director, Bureau of Contracts, 14th Floor, the Governor Alfred E. Smith State Office Building, Albany, New York for:

Engineer's Estimate for M 58-9 is $5,700.00. Maps, plans and specifications may be examined and obtained at the following offices:

(a) Bureau of Contracts, 14th Floor, The Gov. Alfred E. Smith State Office Bldg., Albany, New York.
(b) Department of Public Works, 270 Broadway, New York City, New York.
(c) In addition to the above mentioned offices, plans, maps and specifications for Contract M 58-9 may be examined and obtained at the office of Mr. G. L. Nickerson, District Engineer, 353 Broadway, Albany, New York.

The deposit for Plans and Proposal Forms for Contract M 58-9 is $10.00. A refund in full will be made to bidders for return of one set in good condition within 30 days of award or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

Proposals for M 58-9 must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check, payable to the order of the "State of New York, Commissioner of Taxation and Finance" in the amount of $300.00. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Canal Law and the Highway Law as set forth in "Instructions to Bidders" in the contract specifications.

JOHN W. JOHNSON
SUPERINTENDENT OF PUBLIC WORKS

Bids: August 7, 1958.

Contract M 58-12 for Cleaning and Painting Six Canal Bridges in Niagara County, N. Y.

STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of the Canal Law and Highway Law, sealed proposals will be received, until 10:30 A.M., D.S.T. on August 7, 1958 by Henry A. Cohen, Director, Bureau of Contracts, 14th Floor, the Governor Alfred E. Smith State Office Building, Albany, N. Y. for:

Engineer's Estimate for M 58-12 is $18,-000.00.

Maps, plans and specifications may be examined and obtained at the following offices:

(a) Bureau of Contracts, 14th Floor The Gov. Alfred E. Smith State Office Bldg., Albany, New York.
(b) Department of Public Works, 270 Broadway, New York City, New York.
(c) In addition to the above mentioned offices, plans, maps and specifications for Contract M 58-12 may be examined and obtained at the office of Mr. E. G. H. Youngmann, District Engineer, 65 Court Street, Buffalo 2, New York.

The deposit for Plans and Proposal Forms for Contract M 58-12 is $10.00. A refund in full will be made to bidders for return of one set in good condition within 30 days of award or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

Proposals for M 58-12 must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check, payable to the order of the "State of New York, Commissioner of Taxation and Finance" in the amount of $1,000.-00. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Canal Law and Highway Law as set forth in "Instructions to Bidders" in the contract specifications.

JOHN W. JOHNSON
SUPERINTENDENT OF PUBLIC WORKS

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-5079) will be received at Ogden, Utah until 10 a.m. Mountain Standard Time, August 12, 1958, for furnishing labor and materials for earthwork and structures, reservoirs, Bountiful subdistrict laterals, Davis Aqueduct Lateral System, Weber Basin Project, Utah. Location near Bountiful, Utah in Davis County. Principal items are 212,000 cu. yds. excavation; 125,00 cu. yds. compacting embankments; 600 cu. yds. concrete; and other work. Completion time 450 days. For particulars, address Bureau of Reclamation, P. O. Box 387, Ogden, Utah; or Building 53, Denver Federal Center, Denver, Colorado. W. A. Dexheimer, Commissioner.

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• POSITIONS VACANT

Highway Engineers—Highway Engineers with a minimum of 3 years experience. Excellent opportunity with established consulting engineering firm in Middle West. P-7909, Engineering News-Record.

Have opening for several recent Civil Engineer Graduates with military obligations completed who desire to learn the construction business. Must be ambitious, aggressive, use no intoxicants, preferably single, willing to start in the field on industrial buildings and heavy construction, and willing to move. We operate throughout Kansas and adjacent states. Our organization offers excellent opportunity for advancement. We pay top wages. Martin K. Eby Constr. Co., Inc., P.O. Box 1679, Wichita, Kansas.

Contractor's Engineer, with several years field experience with general contractor on building construction, for well established, dynamic, growing New England general contractor. College graduate preferred. Above average opportunity for advancement in young-minded organization. This man will be located permanently at our Home Office. Please send resume and identification photo. P-8322, Engineering News-Record.

Design Engineers: Graduate Civil Engineers to do detailed design work involving street paving, storm sewer and sanitary sewer projects. Sanitary Sewer projects to be given major emphasis. Application should be made, giving minimum salary, to Department of Personnel, Springfield, Missouri.

Hydraulic Engineers—Civil Engineer Graduates— All grades, experienced in hydraulic design of channels and bridges and/or design and construction of dams, for regulatory agency. Duties include review of plans and specifications, report writing, field investigations and inspections, with some travel and public relations. Salary depending on experience. Location—Harrisburg, Pennsylvania. P-8403 Engineering News-Record.

Wanted Construction Superintendent for heavy steel bridge work. Must be experienced in planning, equipping and erecting jobs in the 1000 to 5000 ton bracket including moveable bridges. Send complete resume including salary desired. All replies held confidential. P-8361, Engineering News-Record.

Sanitary Engineer with experience in design and specification writing for sewage treatment plants. Submit brief resume of qualifications to Gardner and Sterling, Consulting Engineers, P.O. Box 74, Salisbury, Maryland.

Wanted: Experienced concrete paving superintendent for contractor working predominantly in the Texas area. P-8395, Engineering News-Record.

County Engineer Wanted: Require registered engineer with highway experience. For more information contact Guthrie County Board of Supervisors, Guthrie Center, Iowa.

Manager for pre-stressed concrete producer. To take complete responsibility for sales, production, and engineering. Fine opportunity in new industry for man with leadership and resourcefulness. Qualifications: graduate engineer; age 28-40; construction industry experience; preferably some concrete design. Location: Middle West—Salary: open. Send complete resume. P-8424, Engineering News-Record.

Construction Engineer, PE, BSCE, 34, 1 yr. structural design 8 yrs. field engineering & contract management in industrial construction. P-8396, Engineering News-Record.

Established Construction Organization offers a permanent position for a field superintendent on institutional, commercial and industrial projects. Age 30-40, experience: minimum 10 years. Graduate Civil Engineer preferred. Send full resume and salary requirements to The Southern New England Contracting Company, 66 Sanford Street, Hartford 5, Connecticut.

• POSITIONS VACANT

Wanted—Resident Engineers experienced in reinforced concrete, pipe work, hydraulic work, and sewers. Steady work, long engagement, location New York State. State experience and salary expected. P-8427, Engineering News-Record.

Assistant Professor of Civil Engineering to teach basic courses in civil engineering including one of the following fields: sanitary, soil mechanics or materials. Expanding program in engineering education with good salary scale at Sacramento State College; located at State capital, the center of major state engineering activities. Close to San Francisco Bay area and the high Sierra with all varieties of cultural sporting, and recreational activities. Nine-month school year. Write Dean of the College, Sacramento State, Sacramento, California.

Engineer—Civil. Supervise construction small port, West Africa starting immediately for 15 months. Reply direct stating complete qualifications, experience and salary desired. Airways Engineering Corporation, 1212 18th Street, NW, Washington 6, D. C.

Estimator — General Building Construction Northern Ohio area. Must be experienced with good reference. P-8444, Engineering News-Record.

Opening for Asst. or Assoc. Prof. interested in sanitary engineering. M.S. or Ph.D. required. Sept. 1, 1958 or Feb. 1, 1959. Salary and rank depend upon qualifications. Apply chmn. Dept. of Civil Engineering, Univ. of Nebr., Lincoln, Nebraska.

Wanted—Civil Engineer with soil mechanics and construction background. Position involves extensive travel. Reply giving full details of background and experience. P-8459, Engineering News-Record.

• POSITIONS WANTED

Structural Engineer, Registered, 30 years design, construction, specifications, subways, waterfronts, power plants, industrial, office buildings. PW-8276, Engineering News-Record.

Vice President and General Manager, medium size general contracting firm; Reg. Eng., Bach. Degree Civil Eng., Master's Degree Bus. Adm.; 10 years experience one firm as Field Engineer, Sup't, Estimator and Project Manager, and Partner. Age 35, married, 3 children, Scandinavian. Top references. Competitive and Cost Conscious. Desires aggressive position in expanding firm. PW-8261, Engineering News-Record.

Concrete Inspector, Canadian, immigrating U.S. early August. 30 years of age, 10 years experience in hydro-electric and heavy industrial concrete inspection. Member A.C.I. and A.S.T.M. Excel reputation, excel references. Thorough experience in all phases of control and construction. PW-8222, Engineering News-Record.

Construction Manager, age 46. Wide experience in general contracting field as superintendent, general superintendent, presently employed, desire change. PW-8321, Engineering News-Record.

Construction Superintendent or manager qualified, 25 yrs. experience. G.M.C. Lucas, 2225 Wisteria, Sarasota, Fla. RI 79843.

Supt. Const. 20 yrs. Institutional, Industrial, Commercial. Engineer. Anywhere. PW-8457, Engineering News-Record.

Construction Supt. General Construction. PW-8340, Engineering News-Record.

Exp. Construction Engineer, Estimator, 33, BSCE—Bridges, Highway, Power Plants and other heavy. Speak Spanish. Desires foreign or domestics. PW-8428, Engineering News-Record.

Registered highway engineer, land surveyor, 30 years experience. Engineer or construction superintendent, highways, bridges, sewers. PW-8429, Engineering News-Record.

Civil Engineer; M.S.C.E.; age 26; 3 yrs. exp; field & office; desires posit. with gen'l contractor; NY area. PW-8417, Engineering News-Record.

• POSITIONS WANTED

Construction Executive 30 years experience in all phases of heavy and industrial construction, power plants, chemical plants, sewage plants, filtration plants, refinery installations, locks, dams, and tunnels. Interested in connection with aggressive contracting company doing competitive bidding and promotional sales work. Estimating and pricing accurate and construction methods current. Desirous of participating arrangement. PW-8423, Engineering News-Record.

Bilingual, French-English P.E., some Malay, German. Structural-Civil, U.S.C. 41. Military & Civil work. 13 yr. design, 4 yr. field. Wide experience, sewers to cable-ways, buildings & prestress, U. S. Citizen. P.O. Box 607, Colorado Springs.

Chief Draftsman, Structural Stl. FAB. Co. Heavy & Light Str. Exp. Desires similar or Chief Eng. Position with established Co. PW-8426, Engineering News-Record.

Civil Engineer, J.M. ASCE, BCE, 29. PE 9 mos., Ohio Exper. in Foundations, sewerage, highway design, municipal engineering. Diversified consulting experience, coordination, estimating, charge of design, chief of party, boundary and topo surveys. Prefer foreign location, domestic considered. PW-8432, Engineering News-Record.

Structural Engineer: BCE, PE: 26, single, Experience: 2 years Asst. IEO, USAF, 1 year instructor in accredited college, 2 years structural design, principally bridges. PW-8430, Engineering News-Record.

Graduate Engineer, age 32, single, 8 years' experience in design, construction supervision and maintenance of cableways, passenger aerial tramways, chairlifts, material handling systems, seeking responsible position. PW-8460, Engineering News-Record.

Executive, thoroughly experienced all types of building and heavy construction, seeks contacts with General Contractors requiring top man to handle all phases of Contracting, bid to completion. Qualified to run a Large Project, Branch Office or a Business. Salary $20,000. PW-8450, Engineering News-Record.

Construction Man; 12 yrs. Supervisory experience General Construction, age 33. PW-8448, Engineering News-Record.

Const. Supt. BSCE. 36, last ten yrs. running multi-million dollar heavy construction jobs for owner-builder. Wants semi permanent location any type firm South East or Carribbean. PW-8418, Engineering News-Record.

Civil-Sanitary Engineer. B.S.C.E., MSCE, Reg. P.E., 4 years as Resident Engineer & Superintendent on water works construction. 2 years administration and preliminary design. Seek position with firm in above or related fields. Any location considered. PW-8420, Engineering News-Record.

Paving, water or sewer foreman, 10 yrs. experience, age 33, references. PW-8445, Engineering News-Record.

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Registered professional engineer with at least seven years consulting experience in heating, air conditioning, plumbing and/or electrical design and supervision, prepared to make nominal investment and to manage a department or entire branch office, as associate or partner, in well established, progressive engineering firm with projects throughout the country and overseas. Would consider merger with small firm in same field. Furnish complete resume of education and experience, references and availability.

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P-8433, Engineering News-Record
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Unusual opportunity for right man. Send complete resume including experience and salary requirements.

P-8437, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

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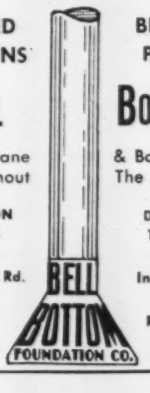

Water for Two Nations

THE ANNOUNCEMENT SOME WEEKS AGO that President Eisenhower was going to pay a visit to Prime Minister Diefenbaker of Canada raised hopes in many quarters that some sort of high level pronouncement on the use and control of the international waters of the Columbia River might come out of their discussions. That such did not prove to be the case is cause for regret since engineering discussions cannot go much farther without further rules of guidance.

Nevertheless, the friendly reception given the President's address before the Canadian Parliament reinforces the feeling in engineering and construction circles that the traditional friendly working relationship between our two countries is as real as ever. To a large degree the basic character of this relationship was plainly revealed by what the President said and how he said it. On both scores he could as well have been talking to the legislature of one of our own states as to the Canadian Parliament. There was the same obvious recognition of equality and respective rights, the same natural assumption of common objectives, the same consideration of mutual achievements and mutual problems that would have occurred in a Presidential speech to his own countrymen. Most Canadians accept this as perfectly normal, just as most Americans would accept a similar speech by Canada's head of state.

It is the existence of this attitude of mutual respect and high regard that makes our two countries as indivisible as Illinois and Indiana, or more appropriately, since water agreements are in question, Arizona and California. In any event the President's speech, while disappointing in that it made no reference to the Columbia waters, was constructive in allaying some groundless fears and laying the groundwork for more frequent high level discussions in the future. For one of these discussions the subject of Columbia River waters should be high on the agenda.

Sorry You're Delayed

THE ABOVE WORDS OF APOLOGY appear on small brochures handed motorists in California who are flagged down due to construction ahead, and required to wait until the road is clear. The brochure contains a description of the construction work that is causing the delay, contains pictures and drawings, and explains the necessity and importance of the project. It carries the name of the California Division of Highways and the contractors who are doing the work.

The brochure should be an outstandingly effective device for improving construction public relations. Hurrying motorists are unthinking and unreasonable where delays are concerned, and can remember a traffic tie-up long after they have forgotten the real pleasures of a trip.

Just to have something new to read during the delay may move the motorist from his morose condition. If the reading matter explains the delay, interests him in what is happening, describes how the work is being done and gives him a new topic of conversation, he could even enjoy his wait. Conceivably, he might become so interested that he would not want to leave, and thus be the cause of another traffic tie-up. But this is a chance worth taking to make a friend instead of an enemy.

The business of public relations takes many forms, some pretty bizarre and unbelievable, but this one with its apology for and explanation of delays caused by necessary construction work is good enough to commend. The California Division of Highways is to be congratulated for trying it out.

Freeway Obsolescence

IN THESE DAYS of rapid community growth and startling advances in vehicle capabilities, it is small wonder that some freeways—particularly interchange structures—suffer from obsolescence. A case in point is the interchange between Cabrillo and Mission Valley Freeways in San Diego (see p. 46). When built in 1948, Cabrillo Freeway was the primary artery. Now Mission Valley Freeway is. And traffic on both routes has magnified substantially.

The fact that such a vital interchange facility has to be reconstructed can by no means be construed as a reflection on its designers and builders. In view of dramatically changed conditions, the 10-year service life can be justified as worthwhile—particularly as many of the existing interchange elements will be reused.

Nor is this San Diego case of freeway obsolescence an isolated one. For example, the famous four-level interchange at the junction of the Hollywood, Pasadena, Harbor and Santa Ana Freeways in Los Angeles suffers daily periods of congestion. It is accommodating an average total of 324,000 vehicles a day—many thousands more than anticipated 15 years ago when the structure was designed. Engineers admit that the four-level structure would be built differently today, with more sight distance and greater separation of some weaving movements—and it is this learning from experience that constitutes the real lesson of freeway obsolescence.

Many states are for the first time building complex interchanges due to the impetus of the interstate highway program. Designers, therefore, should take advantage of experience gained on existing works. Every attempt should be made to construct each freeway facility for a long useful life. But when conditions change and when design techniques improve, officials should not hesitate to make the indicated improvements. Only by following that course—as San Diego is doing—can our highways meet increasing and changing traffic demands.

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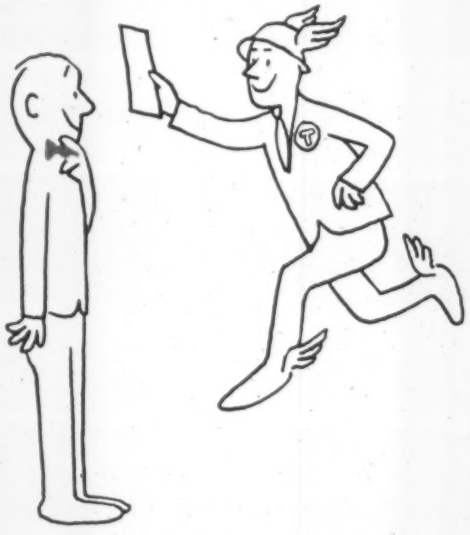

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4.

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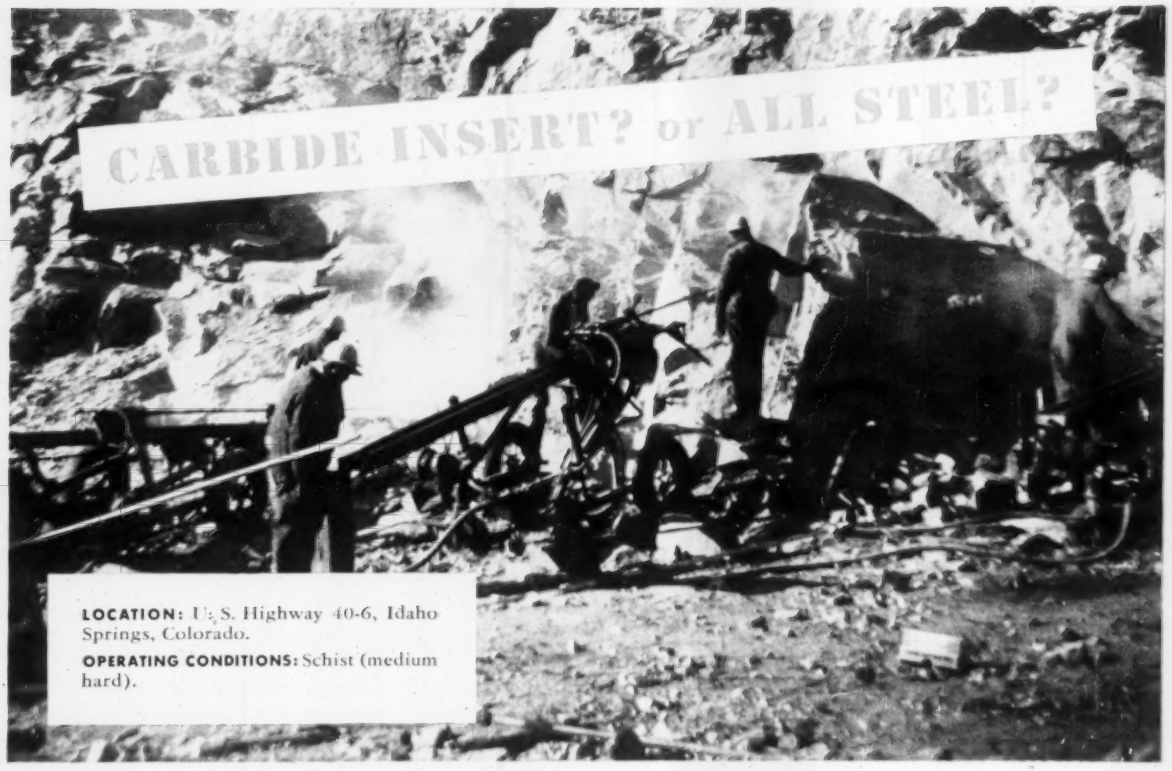

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